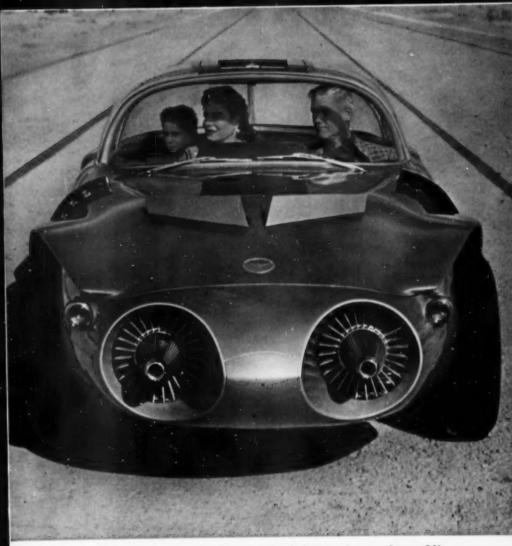
BUSINESS WEEK



GM's turbine foreshadows a rush of changes in cars. (page 29)

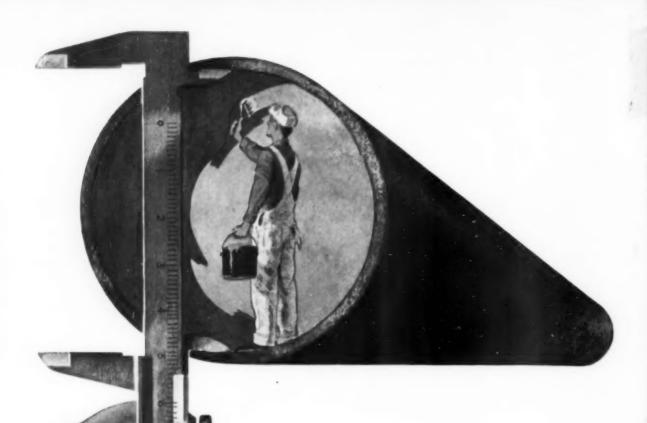
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JAN. 21, 1956

AGO

100

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E B POWER



Wanted:

Compressible painter to work <u>inside</u> a 6-inch pipeline!

Today, this improbable plea is answered by an unusual combination. A revolutionary process puts a coating of Epon® resin enamel inside a pipe line that is already in the ground!

Epon resin liner stops corrosion in a pipe line carrying crude oil, salt water or natural gas, and so prevents product contamination by rust or scale. It greatly increases the useful life of a pipe line. This means great saving of time and dollars for pipe line operators. Smooth and durable Epon resin coating sticks to steel pipe wall with a tenacity never before attained without baking.

Use of Epon resin in pipe line paint is but one application of a Shell Chemical product in the field of industrial transportation,

Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

NEW YORK





Now they cut through rock with fire

A typical example of B. F. Goodrich improvement in rubber

THE white flame shooting out of the metal pipe is 3800 degrees hot. So hot that it eats through 25 feet of solid granite in an bour-something that used to take two men with drills all day long. The spitting fire is made right there in the pipe—a mixture of oxygen and fuel oil fed to the pipe through rubber hose.

The equipment maker wanted a hose that wouldn't go to pieces in a few days from the pressure, oil and heat. His men talked it over with B. F. Goodrich and learned that engineers had developed a hose for just such jobs. They found a way of reinforcing the hose with strong cords that stand over

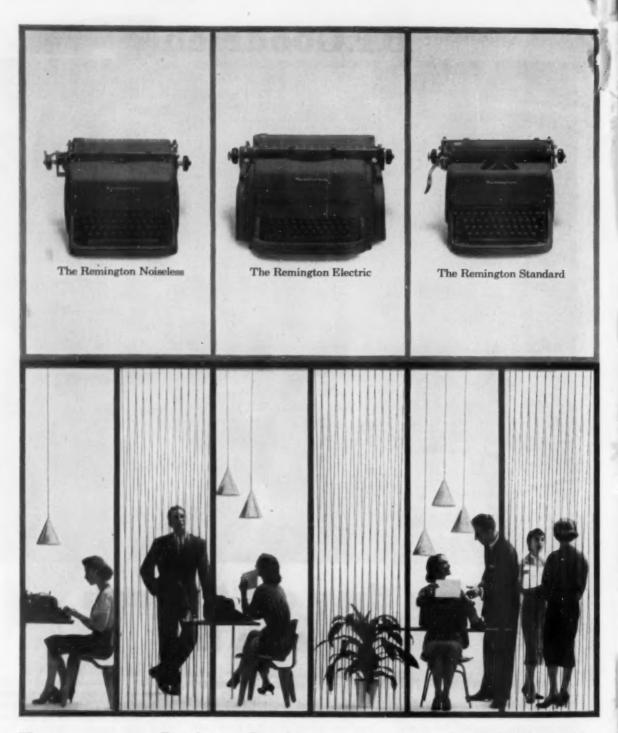
5 times the pressure needed to shoot the flame-protecting the man who does the work. They developed a spe-cial rubber for the inside that stands oil without rotting or weakening.

The B. F. Goodrich hose that carries the oxygen, fuel oil, and cooling water to the jet pipe had been on the job 8 months when the picture was taken, is still going strong.

This is an example of the ways

B. F. Goodrich engineers find to make rubber save money for users-either by doing a job other rubber can't do, or by lasting longer, or by replacing other more expensive materials. Your B. F. Goodrich distributor would like to tell you what these improvements are, and how they can be employed for your profit. The B. F. Goodrich Company, Dept. M-543, Akron 18, Ohio.

F. Goodrich



You can count on Remington Rand to recommend just the <u>right</u> typewriter for your business needs...only <u>we</u> make all three...from the exquisite-letter producing Remington Electric through the unbelievably easy-handling Remington Standard to the amazingly quiet <u>exclusive</u> Noiseless!

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JANUARY 21

NUMBER 1377

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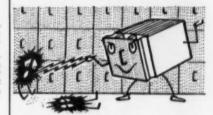
BY O.SOGLOW



SILENCE IS GOLDEN-\$58 WORTH! Office silence really pays off! One large company reports that since reducing office noise, over-all employee efficiency increased 9%, saving \$58 a year on each employee. But noise reduction can be even more important in the factory ...



HOW TO BLANKET THAT HOISE! When air rushes through engine and compressor intakes, it often sets up objectionable sound waves. Air-Maze silencers and filter silencers are specially designed to muffle the noise, keep employees happy.



DEAD END FOR DUSTI Electromaze electronic air filters literally shock dirt, dust and smoke out of the air. Widely used in offices, hospitals and factories. Can be serviced automatically. New G-E selenium rectifier eliminates tube maintenance.

IF YOU BUILD OR USE engines, compressors, air-conditioning and ventilating equipment, or any device using air or liquids - the chances are there is an Air-Maze filter engineered to serve you better. Representatives in all principal cities. For condensed product catalog, write Air-Maze Corporation, Department C, 25000 Miles Rd., Cleveland 28, Ohio.

The Filter Engineers

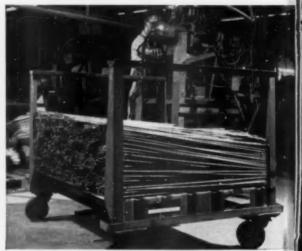
AIR FILTERS . SPARK ARRESTERS . LIQUID FILTERS SILENCERS . OIL SEPARATORS . GREASE FILTERS



Inverted, Republic Stacking Racks permit long lengths of tubing to overhang without dragging on floor. They also serve as work tables during fabricating.



PR-15 Racks are easily stacked to practical heights regardless of the bulky material they contain.



Mounted in normal position on steel dollies, racks provide ease of movement of tubing from one operation to another.

REPUBLIC



(C) World's Widest Range of Standard Steels

How Republic stacking racks help solve a

"Hang-over"

problem

Franklin Products Company, Franklin, Michigan, manufactures automotive and aircraft fuel and hydraulic lines in varied lengths up to ten feet. Republic Stacking Racks, used in their normal position mounted on steel dollies for mobility, are ideally suited for handling coils and shorter lengths of tubing. However, the longer lengths, bent at sharp angles, present a problem. The tubing frequently has too much overhang for the racks in their normal position and as a result the tubing drags on the shop floor.

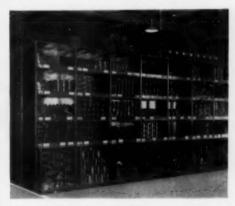
To solve this "hangover" problem, Franklin Products have simply inverted the racks on the dollies. The height gained provides plenty of room for overhang and prevents the tubing from dragging on the floor. This double usage of Republic Stacking Racks speeds both handling and fabricating. It has resulted in several other advantages. In the inverted position, the racks serve as work tables during the various tube fabricating operations and at a comfortable operator height. They are also used for transporting tubing from one operation to another.

In conventional use, Republic PR-15 Stacking Racks are especially adaptable to packaged materials that do not require the use of sides. Construction features permit easy entry by fork or platform truck. Sides and bottom corners are designed to permit stacking of racks to any practical height either loaded or unloaded.

Give you an idea for your shop or plant? Then contact your Republic Materials Handling Equipment Dealer. He has all the facts on PR-15 Stacking Racks or on the many other types of materials handling equipment made by Republic's Pressed Steel Division. Or write us for more information.

STEEL and Steel Products

Here are More Problem-Solvers from Republic



WEDGE-LOCK STEEL SHELVING made by Republic's Berger Division provides maximum loading in minimum floor space. It's designed for high stacking of heavy items with no sagging, swaying or buckling. Joints actually get tighter as weight increases. Wedge-Lock Steel Shelving is completely flexible, It can be assembled quickly and easily. Write for literature and full information.



CHAIN SLINGS, ATTACHMENTS AND ACCESSORIES are supplied by Republic's Chain Division in Alloy Steel, High Test Steel and Wrought Iron. They provide an exceptionally high degree of safety in numerous handling operations. All Republic Chain Slings are proof tested and warranted to meet or exceed specifications. They are made in any length to meet your requirements. Write for new catalog.

	CORPORATION Street, Cleveland 27, Ohio
Please send mo	re information on:
and the same of th	acking Racks Chain Slings Wedge-Lock Steel Shelving
Name	Title
	Title



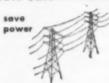


MODERNIZATION WITH

INSTRUMENTATION really paid off for Colorado Fuel and Iron Corporation. When 40-year-old soaking pits were modernized, including the use of Honeywell instrumentation, yield went up \$14,000 annually . . . fuel rate went down 25% . . . pit life was lengthened 50% . . . refractory savings amounted to 6c a ton . . and daily bottom making time was cut from an hour and a half to 25 minutes. And this is no isolated instance of the benefits of Honeywell instrumentation.

Instrumentation can













by your manufacturing facilities?

Many companies modernize with instrumentation . . . even without new process equipment

WHEN YOU are pushing production equipment to the breaking point—and are still losing the battle of the break-even point—it's time to go modern the low-cost way . . . with instrumentation.

Full use of today's instrumentation gives you the newest methods of production and process measurement, recording and controlling. And that adds up to increased production, improved quality and lowered operating costs.

Development of instrumentation for industrial use moves so fast that applications undreamed of yesterday are commonplace today.

And the benefits show up not only in the plant but in the office as well. For instruments also provide better-than-ever cost accounting data ... speed research to move new products to market ... permit greater manpower economy.

Honeywell can show you how to get such results.

For years, we have been developing and producing the instruments used by progressive industry to help them move ahead faster . . , more profitably. We want to work with you.

MINNEAPOLIS-HONEYWELL REGULATOR Co., Industrial Division, Wayne and Windrim Avenues, Philadelphia 44, Pa.



Honeywell

First in Controls

INSTRUMENTATION BRIEFS

During the past year, Honeywell has brought out a number of developments of interest to industry. Among them...

"Package" control for atomic power.

Drawing on extensive experience "behind the atomic curtain," Honeywell has produced a complete, unitized control system for nuclear power reactors. This instrumentation is being installed in several research reactor projects now under construction.

Automation in gathering plant facts

is one of the newest and most promising concepts in instrumentation. Honeywell Data Handling Systems have already been installed to collect information from hundreds of spots in a complex manufacturing process, to display data for accountants as well as for operators, and to reduce information to printed numerical records.

All-electronic control for power systems,

developed by Honeywell, helps to make public utility operation more efficient and economical. Supervision of an entire system is literally at a man's fingertips. Increases in system demand can be met almost instantly by assigning the most efficient generators to take extra load.

High-speed recording of test data to speed research.

The new ¼-second ElectroniK recorder can keep up with fast-moving temperatures, pressures, forces . . . doing work that often called for complex, less accurate photographic techniques. This is the latest in a line of special instruments designed to relieve scientists of the time and tedium of many test and experimental measurements.



There's no **blackout** at night on concrete

Confidence. Freedom from tension. These are yours when you drive at night on light-colored, high light-reflecting concrete. You can't be safe when you can't see! Not only is there no blackout at night on concrete, but there is greater safety in its gritty, skid-resistant surface that grips your tires firmly when you apply the brakes, making it easy to slow down or stop, even in the rain.

Concrete not only is the safest pavement, but the most economical. It usually costs less to build than other pavements designed for the same traffic, costs less to maintain and lasts much longer. Low first cost, low maintenance cost and extra long life combine to make concrete the true low-annual-cost pavement.

So support your state highway department to get longservice, low-annual-cost roads. And send for the free booklet, "Save Lives, Save Dollars with Concrete." It is distributed only in the U.S. and Canada. Address Dept. 1c-12.

PORTLAND CEMENT ASSOCIATION

33 W. Grand Ave. § A national organization to improve and extend the uses of portland coment Chicago 10, III. § and concrete . . . through scientific research and engineering field work

READERS REPORT

A Dual Status

Dear Sir:

In your special report Building a Nation in the Shadow of a Giant [BW—Dec.3'55,p100] it is said (p 105) that "the present Governor General, Vincent Massey . . . is the first native born Canadian [no longer, in accordance with the Canadian Citizenship Act of 1947, a British subject] to represent the Oueen of Canada.

The statement enclosed within brackets implies that the Governor General is a Canadian citizen who, since 1947, has ceased to be a British subject. I should like to point out an inaccuracy in this statement. The Canadian Citizenship Act states that "a Canadian citizen is a British subject." The Governor General is therefore a Canadian citizen and a British subject.

To a casual observer, the enactment of the Canadian Citizenship Act would appear to alter the status of Canadians by changing their status of British subjects to that of Canadian citizens. However this was not the intention of Parliament. Its intention was to define in legal terms the peculiar status of Canadians who are both members of the Commonwealth and of a sovereign nation. From this dual membership flows a dual status: British subject and Canadian citizen. It was to clarify this seemingly anomalous and undefined situation that the Canadian Citizenship Act was passed. . . .

ANDRE LAFRAMBOISE OTTAWA, ONT., CANADA

 Our thanks to Reader Laframboise for this clarification.

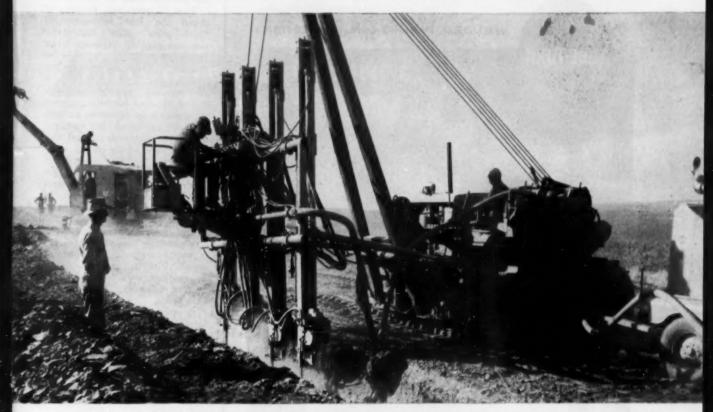
Automation Pioneer

Dear Sir:

Your interesting article Engineers for Automation [BW—Dec.17'55, p86], which stressed the need for better education of automatic control engineers, recalls to this old-time instrument engineer our early educational efforts here at the Bristol Co.

As early as 1920 we recognized this need, and set up Bristol's Instrumentation School to train our own sales and service engineers. In 1927 we opened our school to customers' engineers and technicians. Since then we have "graduated" several hundred students, many of which are now sparking

Gardner-Denver... Serving the World's Basic Industries



One man at the hydraulic controls of this Gardner-Denver Quad-dril does the work of four in drilling blast holes fast for Pacific Northwest Pipeline.

To market, to market...1466 rocky miles!

Here's a new natural gas empire: the whole Pacific Northwest! New wells with a reserve capacity of 3 trillion cubic feet will supply it. A 1466-mile pipeline system, now being built over the mountains, will serve it.

Gardner-Denver Quad-drils, rotary air compressors

and other drilling equipment are helping to get the rock out-fast-on this top-speed project. It's usual for Gardner-Denver-the 97-year-old company with young ideas-to be in on the unusual, history-making jobs. Gardner-Denver Company, Quincy, Illinois.

Gardner-Denver rock drilling equipment pioneers new deep hole drilling methods for faster, lower-cost ore breaking in underground mines.



Highway construction moves faster when Gardner-Denver wagon drills and air compressors accelerate the drilling-blasting cycle in rock cuts.



America's big assembly lines spurt to new efficiency with Keller air tools. Here a Keller Tool nut setter tightens nuts to pre-set torque.

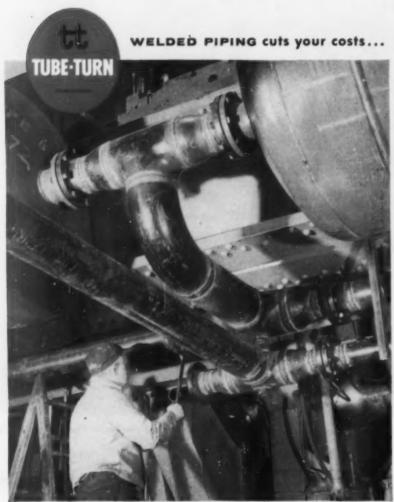




GARDNER - DENVER

THE QUALITY LEADER IN COMPRESSORS, PUMPS, ROCK DRILLS AND AIR TOOLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

Gardner-Denver Company, Quincy, Illinois



Press piping at Ford Motor Company's new Cleveland Stamping Plant. Piping contractor: Joseph Davis, Inc.

Big squeeze makes a body beautiful

This leakproof welded piping helps a press transform sheet steel into Ford automobile bodies . . . smoothly, efficiently. The piping, fabricated with TUBE-TURN® Welding Fittings and Flanges, is part of a pneumatic system that provides counter-balancing for the press stroke. Used in place of mechanical counter-balancing, this air pressure system provides smoother operation, permits quick adjustment for different die weights.

TUBE-TURN Welding Fittings, outstanding for high strength and dependable quality, were selected to insure steady, uninterrupted piping service. You get more for your money when you specify and buy TUBE-TURN Welding Fittings and Flanges. Call your nearby Tube Turns'

Distributor for speedy, complete-line service.



"TUBE-TURN" and "th" Reg. U.S. Pat. Off.

The Leading Manufacturer of Welding Fittings and Flanges

TUBE TURNS

A DIVISION OF NATIONAL CYLINDER GAS COMPANY LOUISVILLE 1, KENTUCKY the current swing to automation.

Then 22 years ago, Bristol produced the first fully-automatic "push-button" plant control-system [see page 40, BUSINESS WEEK November 7, 1936]. In 1934 we called it "Coordinated Process-Control"; today we would call it "automation." This advance spotlighted the need for better training of engineers in automatic control. So in the summer of 1949 we began courses in automatic control theory, exclusively for college professors (the first such ever offered, we believed). Many of these professors-from leading schools such as Case Institute, University of Princeton, and Massachusetts Institute of Technology-founded the college instrument courses that now graduate annually thousands of engineers trained in instrumentation. The Bristol Co .- pioneer in automation-is equally proud to have pioneered in education for automation.

BUSINESS WEEK'S help in publicizing this long-felt educational need, is much appreciated by the instrument industry.

HARRY E. BEANE

VICE-PRESIDENT
THE BRISTOL CO.
WATERBURY, CONN.

One Farmer's Solution

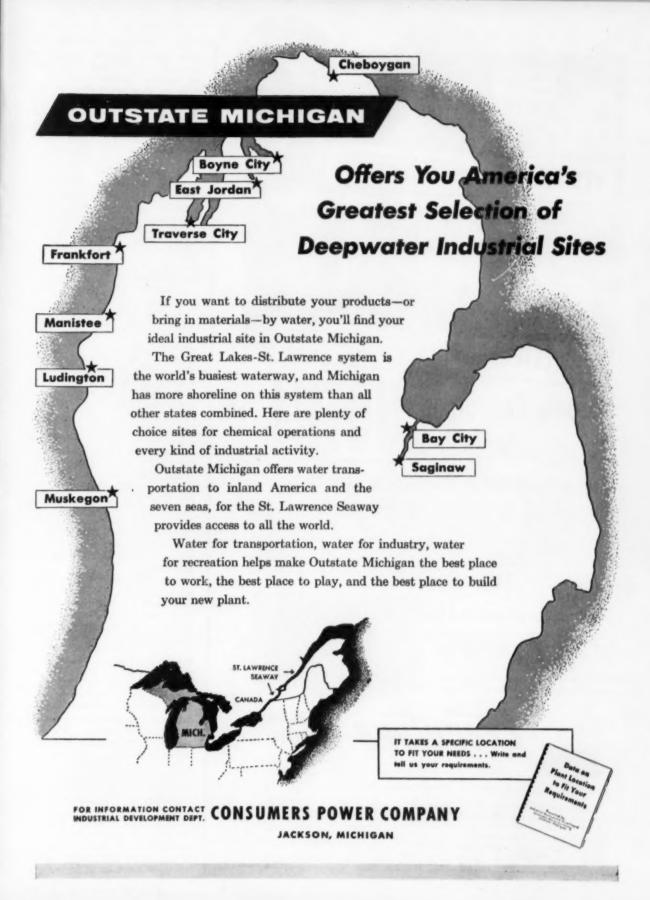
Dear Sir

Your special report What's Behind the New Farm Crisis [BW—Dec. 10'55,p106] is one of the finest, most concise and most accurate that I have read, yet it did not search deeply or thoroughly enough.

. . . My comments are biased, from the point of view of a vege-table farmer. . . .

table farmer. . . . Did the farmers actually want to produce more? Didn't we actually want to reduce costs? Isn't that the real basis for all research, be it land grant colleges, extension services, or research facilities of great corporations? The actual incentive to produce more came from the government that over-looked the fact that we, the farmers, are producing units operating underneath a capitalistic system with profits a prime motive. . . . Under ordinary conditions, increased production of any one crop results in lower prices followed by lower production, a cycle readily noted by many farm operators. . . .

You say "population growth will not solve the problem — unless some basic change is made in economic organization." Here is the crux of the whole problem.





...only Executone combines BOTH!

IN THE WORLD'S MOST ADVANCED INTERCOM SYSTEM!

• For the first time in any intercom system you can answer calls from across the room—and at the same time enjoy positive assurance that no one can eavesdrop on conversations in your office. Executone's exclusive "CHIME-MATIC" signalling announces every call with chime and signal light—warns that your circuit is open.

SAVE TIME-get more work done!

Thanks to Executone's "Remote Reply", employees can now answer calls without interrupting their work. You get instant response without loss of working time. You eliminate waiting and costly "call backs" when phones are busy. Roving employees are located quicker. You give instructions, get information without delay, yet you have "privacy protection" at all times. Work flows smoothly. Every hour becomes more productive! Executone soon pays for itself in many ways. Ask for full details. No obligation.



EXECUTORE INTERCOM SYSTEMS

GET THE FACTS	FUIUILE SYS	TEMS
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☐ INTER-OFFICE COMMUNICATION ☐ INTRA-PLANT COMMUNICATION	Firm	
SWITCHBOARD RELIEF	Address	City

In Connda 331 Bartlett Avo., Toronto

Let government assemble and issue factual accurate reports on intended acreage and production of livestock, transfer these intentions to their relationship to demand and market price, and let these facts be known to all producers. Any operator with any credit or money to operate will switch his plans into those channels in which a profit is reasonably possible.

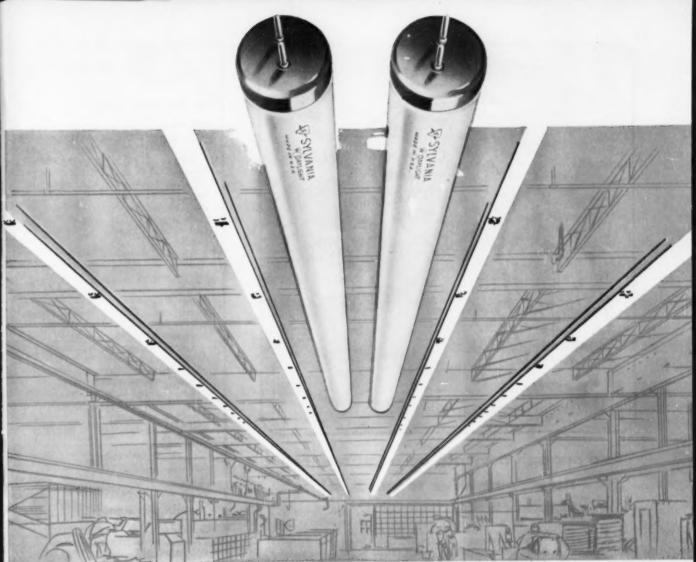
It may happen that Mr. Credit (those banks doing business with farmers] will step in and perform this service before any government division will assume this responsibility. When this happens, the efficient farmer will continue to make a good income, will be a good customer for industry, and become an active part of any business boom.

You are quite right that "low-income farmers comprise a social welfare problem." Treat them as such and please do not include them with the producing operator who is using all the modern tools available to lower costs and justify his business economically by the production of wealth at a price desirable to others.

I believe that basically every investment in new machinery made by any farmer today is made with but one viewpoint—cut costs. Much to the discredit of the farm machinery people they do not realize this fact. Of what value is chrome on a tractor? Do the adjectives used in advertising cut costs? Many of us are operating tractors "off the books" because they can do anything the new will and cheaper.

You state that young farmers with mortgages are backing the movement for high supports. Is there any reason that a farmer should not be able to operate profitably on borrowed capital as does industry? Farming is industry, productive industry. Look at it from that point of view. Certainly we are individuals, yet all . . . are governed by a profit motive. We would like to produce when we can sell, and stop production when we cannot sell at a profit. There isn't one of us who would not cut acreage for greater profits and we know that we have the know-how to produce all the food needed by this nation, come drought, disease, or insects. Crop failures from that source are of the past.

Give us accurate forecasts. Translate to supply, demand, and prices we will receive. Let Mr. Credit step in and use his usually excellent judgment. Do that and



Sylvania Fluorescent lamps carry the famous "money-back" offer to outperform the lamps you are now using, as stated below.

These are the lamps that raise plant efficiency and lower lighting costs

Modern management recognizes good lighting as a potent plant tool that consistently helps lower costs and increases production.

Among many of the country's largest industrial producers Sylvania Fluorescent lamps are first choice for economically efficient, long-lasting, high-output illumination... and quality of the finest degree possible is one of the prime reasons for their position of preference.

Equally important, when you buy Sylvania Fluorescent lamps you buy lighting satisfaction which carries this "money-back" offer:

 We'll buy back, at the price you paid, any Sylvania Fluorescent lamps that do not, in your opinion, outperform any other fluorescent lamp you are now using, on the basis of uniformity of performance and appearance, maintained brightness and life. Learn, without obligation, how better lighting with Sylvania Fluorescent lamps can help improve production and lower your costs. Call your Sylvania Supplier, or write:

SYLVANIA ELECTRIC PRODUCTS INC. Lighting Division—Dept. 6L-1401 60 Boston Street, Salem, Mass.

In Canada: Sylvania Electric Products Inc. (Canada) Ltd. University Tower Building, Montreal

SYLVANIA

... fastest growing name in sight



"Bad enough they put up a Cyclone Fence -they don't have to rub it in!"

You should feel confident — when your worldly goods are safe and sound behind a tough, Cyclone Chain Link Fence. You'll have company too, because Cyclone is the most widely-used property protection fence in the world.

You can buy cheaper fences than Cyclone, but they may cost more in the long run. Cyclone Fence has heavy posts and rails, tough steel woven fabric galvanized after weaving to resist rust . . . gates that open easily without sagging or dragging.

Part of the secret is the installation. When you buy Cyclone, you know that full-time experts will do the job-men who have spent most of their lives learning how to install a fence so that it stays tight and trim.

CYCLONE FENCE DEPT., AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS - SALES OFFICES COAST-TO-COAST - UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS CYCLONE FENCE

Cyclone is the trade-mark name of fence made only by Cyclone. Accept no substitute,

FREE BOOKLET SHOWS HOW TO PROTECT YOUR PROPERTY

This booklet shows how to guard against vandals and intruders with proper use of fence. It is filled with photographs and drawings that show how to use fencing for best results, plus information on gates, harbed wire top treatment, and installation methods. Send for your free copy whether you need only a few feet—or miles of it.

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UNITED STATES STEEL

the farm problem will become a part of history.

WES HANSCHE

RACINE, WISC.

A Burning Issue

Dear Sir:

At a time when we are attempting to salvage all the clean usable wastepaper possible, including old newspapers, for re-use by the paper and paperboard mills, you suggest to the public a method of burning old newspapers by converting them into a sort of fireplace logs [BW—Dec.31'55,p80 — Personal Business]....

This year the wastepaper dealers of the U. S. supplied the consuming mills with more than 9-million tons of wastepaper. As a secondary forest, this alone saved a great forest growth for our country, an acreage perhaps twice as great as the state of Maine.

Instead of suggesting to the public that old newspapers be burned, it would be to the great advantage of the manufacturers of paper, paperboard, and building materials if you called upon the public to save them for salvage.

COLLEY S. BAKER

DIRECTOR

EASTERN CONSERVATION

COMMITTEE

NEW YORK, N. Y.

No Inducement?

Dear Sir:

Your editorial The Bear and the Slide Rule [BW—Dec.24'55,p104] . . . fails to mention management's duty to use their trained engineers efficiently. It is altogether probable that fewer engineers, college graduate engineers, are necessary if those that are available and have the necessary experience are used to their greatest capabilities. It is possible to devise systems and utilize available talent a great deal more effectively than is now done in a great many corporations.

I maintain the talents of the man above fifty are generally cast aside and a great many younger men are put through a course of training that wastes his and his company's

The one thing I noted particularly about your excellent review of the Soviet Engineer [BW—Nov. 19'55,p41] was the inducement is offered him. What inducement is offered a man to enter the engineering profession in America? . . .

E. HOLLOPETER

CHATHAM, N. J.



His slow-moving shipments drove Smedley to bed With chills and hot fever and pains in his head.



Now Smedley's the picture of vigor and vim—
Swift RAILWAY EXPRESS makes deliveries for him!

The big difference is

Whether you're sending or receiving,
whether your shipment is big or small, whether
it's moving by rail or air, it pays to specify
Railway Express. You'll find it makes
the big difference in over-all economy, speed,
and safe, sure delivery. It's the complete
shipping service—free enterprise at its best.

New Low Import-Export Rates!

Railway Express now offers inland shippers and receivers rate reductions on import-export shipments . . . through waybilling from point of origin to destination. Ask your Railway Express agent about this new international service.



... safe, swift, sure



When Your Safety Director Fights for Every Dollar, Respect Him—

He Can Save You

Many More in Preventing
Accidents Like This!

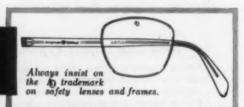
A rock drill operator in a silver and lead mine lost the sight of one eye when struck by a rock chip dislodged by his drill. A court awarded \$2,755. Pity of it is that a quality Chipper's Goggle costing only about \$2.30 would have prevented this accident. The mine management would be ahead by \$2,753.70 plus medical and other hidden costs — and the miner would still have his eye.

To prevent these unnecessary high costs, more and more managements are putting the job of accident prevention in the hands of a specialist — and backing him up! He can pay for his salary many, many times over in the accidents he prevents and the quality of the protective equipment he recommends . . . in eye protection, safety clothing or respiratory protection. For instance, when he recommends an AO† Eye Protection Program, he knows you'll get a better break on insurance costs, save on idle machine charges, and take no chances on key workers being knocked out and slowing up production. He knows you'll improve workers' morale, also. Ask an AO Safety Representative to call with all the facts.

†T.M. Reg. by American Optical Company

American Optical

SOUTHBRIDGE, MASSACHUSETTS . BRANCHES IN PRINCIPAL CITIES



BUSINESS OUTLOOK

BUSINESS WEEK JAN. 21, 1956



Washington restored 30-year terms on mortgages this week—and that makes 1956 a year to test the size of the housing market.

Easier mortgage terms make it possible to find out (1) whether we may already have overbuilt a bit, and (2) if not, how big demand really is.

Easing of mortgage terms now clearly shows that Washington doesn't want home building to sink too far. Yet more time to pay, by itself, doesn't make loans really easy to get—not with money still tight.

Credit will have to loosen up, too, before the mortgage market gets back to normal. And that has to wait on a leveling-off in business.

Mortgage money has always been the life blood of the housing market. But its role has been steadily growing in importance—more than most people realize, perhaps.

When you stop and consider how much the cost of building has risen, you begin to see why so many buyers need such large loans.

A home that cost \$7,500 before the war would have needed nearly \$17,000 to build in 1950.

By the end of 1955, the cost was up virtually to \$20,000, judging from monthly building cost estimates of E. H. Boeckh & Associates.

Home building costs have declined in only two postwar years—1949 and 1954. And it is interesting to note that the ensuing year, in each case, was one of exceptional activity in housing. (Factors other than costs entered in, to be sure, but there's food for thought here.)

Skyrocketing of 150% in home building costs since the late 1930s (nearly 90% since 1945) tells you a lot about the housing market:

- Why the price of old houses has risen so much. The bigger the price tags on new homes, the more valuable old ones become. (This allows only for replacement costs, doesn't compare attractiveness.)
- Why rents have kept on going up. Home building would have caught rents by the coattails as housing got less scarce except for one thing: With the rise in building costs, the monthly mortgage payment had to go up (even with 25 and 30 years to pay). This let rents keep on rising, too.
- Why buyers have accumulated equities. Those who bought a few years ago have piled up not only their payments but also the increment represented by rising market values.

Result is that higher price tags on houses have actually put more homeowners in the market for bigger, more up-to-date housing.

The market, over a few years, has given the average homeowner \$1,000 or \$2,000 or \$3,000 of profit—a good chunk toward the down payment on the bigger house he needs as his family outgrows the one he purchased in shortage days.

This has helped to maintain steady demand for better homes.

Rising housing values—and the sense of security they bring to owners—are helpful as long as they last. Yet old timers can't help wonder if the real estate cycle is sneaking up on us in its pernicious way.

BUSINESS OUTLOOK (Continued)

BUSINESS WEEK JAN. 21, 1956

Any oversupply of housing would depress rents. Very quickly renting would once again become more attractive than home buying.

Also, a business slump of any proportions would set building back. That, in fact, might bring on mortgage defaults, threatening the first real estate panic in more than 20 years.

Nothing that looks at all like distress has developed in housing so far, of course. In fact, judged only on last year's final results, it might not seem that building was even in need of any stimulant.

New dwelling units started came to 1,330,000, second only to 1950. And, because houses are bigger now and costs are up, the value of residential building broke all records at about \$16½-billion.

But, plush as these figures are, they have a frayed edge:

Peak levels were reached some time ago. The trend has been downward long enough to cast serious doubts on 1956 prospects.

New housing starts were at their high when 1955 began (close to 1½-million at a seasonally adjusted annual rate). They ended up at the lowest point of the year (slightly below a 1.2-million annual rate).

We haven't felt that too much, because work at the building site didn't turn down so soon. Houses that had been started late in 1954 and early in 1955 weren't finished for some months.

Thus work put in place hit its peak rate of \$17.2-billion a year in midsummer. By yearend, it had fallen only to a \$15.9-billion rate.

But the value of work put in place will go still lower, reflecting the decline in starts during the late months of 1955.

Declines in home building last year were at first blamed almost wholly on tight mortgage money and stricter terms. But, as the year progressed, apprehension grew over a possible oversupply.

Vacancy rates rose in many localities; the rise in rents faltered.

That's why a lot of analysts have predicted 1956 starts 10%, or even more, below the final figure for 1955. They expected mortgage money to ease before long, but doubted that it would make much difference.

Some, in fact, expect lower activity until perhaps 1960.

Pessimism on the housing outlook isn't shared in Washington.

At least, Albert M. Cole, head of the Federal Housing Administration, declared this week that 1956 starts should reach 1,300,000.

This seems to imply a belief that, given lenient mortgage terms, home building will stabilize at its 1955 level.

Housing is in a position, if the Washington view proves correct, to help us through another of those "rolling adjustments" (if the economy faces such an adjustment in the months ahead).

This much, at least, is true: Home building has had a shakedown.

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Give us one of your employees for three days... he may save your business

Last winter an oil well fire in Oklahoma burned for forty hours and cost \$40,000 before they called in Floyd Timmons, an Ansul Fire School graduate, who extinguished it in five seconds.

We have many such cases in our files, and they all go to prove just one thing: all the fire-fighting equipment in the world will not save your business unless trained hands are available to man that equipment.

Since 1940 Ansul has operated the nation's only fire-training school sponsored by an equipment manufacturer. Many hundreds of Ansul's customers have sent one or more of their employees to this unique school for three days of intensified training. Here,

your employee will receive practical training, the kind he can pass on to others in your plant and thereby multiply its value. There is no charge for this training whatsoever. It is one of the many extra services made available to all Ansul users.

These services, teamed up with dependable Ansul fire-fighting equipment, give you what you really pay for, what you really need—complete fire protection.

You owe it to the life of your business to learn more about the Ansul Fire Training School. We will send you complete details and a schedule of session dates. Write The Ansul Chemical Company, Fire Equipment Division, Dept. W-101, Marinette, Wisconsin.

Ansul, pioneer manufacturer of Fire Extinguishing Equipment, Refrigerants and Mechanical Refrigeration Products, Industrial and Fine Organic Chemicals.





IS NATIONAL STEEL

"In Just 45 Days, Steel Changed My Whole Approach to Farming"

An Ohio farmer tells a true story of losing five buildings in a fire. And what happened when he replaced them with steel Quonsets...



er, you fear those words more than almost anything. They really shake you up."

exploded:

on FIRE!'

"The barn's

"When

you'reafarm-

"My tenant Before volunteer firemen could phoned me at come six miles from Plain City, Ohio, 10 a.m. that five buildings on the 360-acre farm of O. W. "Bud" Bridgman were a Sunday and blazing inferno.

What Bridgman did

About four days after the fire, Bridgman called the local Quonset dealer, Paul V. Reed, in nearby London, Ohio.

Says Bridgman today:

"I'd read about steel Quonsets and

was convinced they could get me back in business quickly."

He was right. In just 45 days five new steel Quonset buildings-made by Stran-Steel Corporation-were erected and in use.

"And I can tell you now, there are many more advantages to my steel Quonsets," Bridgman says.

How steel works for him

"There just isn't anything you can



grain-drying and storage Quonset he can harvest earlier and reduce the risk of bad weather. "With facilities to dry crops, we can store them-and control their moisture content perfectlyuntil the market is right for selling."

Reduce costs, too

With his Quonset machine storage shed, this steel-minded farmer finds equipment deterioration is reduced to a minimum. And his Quonset garage and workshop provides comfortable space for farm repair jobs (and an automobile and truck, too).

"I guess you'd sum it up this way." Bridgman says. "These steel Quonset buildings work for and work with a farmer. Their original cost was less than I expected, and what we gain in ease of operation and less labor makes a real savings."

National's role

Pioneered by Stran-Steel-a member of the family of National Steel Corporation-steel Quonset buildings are winning wide acceptance as an important "working tool" on the farm.

Stran-Steel buildings of varied types also are finding many new applications in industry and commerce.

Their strength, of course, is steel-America's great bargain metal. At National Steel it is our constant goal, through research and cooperation with our customers, to make better steels for the better products of America's industries.



THIS IS NATIONAL STEEL

GREAT LAKES STEEL CORPORATION WEIRTON STEEL COMPANY STRAN-STEEL CORPORATION THE HANNA FURNACE CORPORATION HANNA IRON ORE COMPANY NATIONAL MINES CORPORATION NATIONAL STEEL PRODUCTS COMPANY



Viewed from the beef cattle shelter is Bridgman's hay storage and self-feeding steel Quonset, equipped with movable manger for labor-saving feeding of Bridgman's stock.



With his combination car corn and small grain drying and storage building, Bridgman stores crops and controls moisture until the market is exactly right for selling.



Bridgman's machine storage building reduces equipment deterioration to a minimum. Since Quonsets are made of steel, they end fire worries, and cut repair costs.

say against them. For one thing, I've got no more worries about fire. These steel Quonsets are really versatile, too. Do many jobs. They just about eliminate maintenance. Protect my crops. And do they save time and labor!"

Bridgman's steel Quonsets include a hay storage and self-feeding building, a beef cattle shelter, a combination ear corn and small grain drying and storage building, a machine storage building, and a garage and machinery repair and service center.

Quonsets are profit-makers

Bridgman says his hay storage and self-feeding Quonset, equipped with a movable manger, reduces labor. "When cattle are comfortable, and have hav before them all the time, they eat more. And that means more dollars when you take them to market.

"And with post-free construction it's easy to put up the hay, or to use the building for any number of farm jobs." Bridgman says that with his

NATIONAL STEEL



CORPORATION PITTSBURGH, PA.



see your

refrigerator

this way?

Coils for constant cooling! They're out of sight, but never out of action. Behind the gleaming porcelain finish is a network of steel tubing that carries the "cold". . . keeps food fresh or frozen . . . as you like it. And chances are, it's GM Steel Tubing by Rochester Products that's on the job, Heated under pressure, GM Steel Tubing is formed and fabricated . . . shaped just right and ready to use. That's why so many manufacturers select space-saving, money-saving GM Steel Tubing. See your Rochester Products engineer, or write direct for further information.

GM STEEL TUBING BY

PRODUCTS
DIVISION OF
GENERAL MOTORS
CORPORATION
ROCHESTER N.Y.

DOWESTER

FIGURES OF THE WEEK

1947-49=100 170	1947-49 = 100 170
160	160
150	150
140	140
30~~~	1956
110 1951 1952 1953 1954 1955	J F M A M J J A S O N D

D .	14/ 1					9 Latest Week	Week **	Age	Ago	Average
Business	Week	Index	(above)			*150.0	+149.3	150.7	137.2	91.6

PRODUCTION					
Steel ingot production (thousands of tons) Production of automobiles and trucks. Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands) Electric power output (millions of kilowatt-hours). Crude oil and condensate production (daily av., thousands of bbls.). Bituminous coal production (daily average, thousands of tons) Paperboard production (tons).	2,391 183,571 \$67,376 11,594 7,014 1,854 296,030	†2,428 †149,386 \$60,564 11,057 7,026 1,820 182,195	2,338 203,868 \$61,578 11,602 6,946 1,803 296,461	2,008 184,362 \$56,953 9,928 6,689 1,418 255,794	1,281 62,880 \$17,083 4,238 4,751 1,745 167,269
TOARS					

Carloadings: manufactures, misc., and l.e.l. (daily av., thousands of cars)	73	72	72	61	82
	49	47	49	39	53
	-11%	++10%	+5%	+13%	+30%
	245	198	247	200	22

PRICES					
Spot commodities, daily index (Moody's Dec. 31, 1931 = 100)	403.7	405.5	405.8	413.6	311.9
Industrial raw materials, daily index (U.S. Dept. of Labor BLS, 1947-49 = 100)	100.6	102.4	102.1	90.9	++73.2
Foodstuffs, daily index (U. S. Dept. of Labor BLS, 1947-49 = 100)	74.2	75.0	74.2	90.7	1175.4
Print cloth (spot and nearby, yd.)	20.5€	20.6€	20.8€	19.2€	17.5e
Finished steel, index (U. S. Dept. of Labor BLS, 1947-49 = 100)	155.7	155.7	1154.7	144.6	1176.4
Scrap steel composite (Iron Age, ton)	\$53.17	\$53.67	\$52.17	\$34.50	\$20.27
Copper (electrolytic, Connecticut Valley, E&MJ, lb.)	44.205e	44.055¢	43.745¢	30.000€	14.045e
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)	\$2.26	\$2.26	\$2.22	\$2.44	\$1.97
Cotton, daily price (middling, 14 designated markets, fb.)	34.00€	33.82€	33.76¢	33.96¢	**30.56¢
Wool tops (Boston, Ib.)	\$1.76	\$1.72	\$1.70	\$2.02	\$1.51

352.9 3.61% 3%	354.4 3.61% 3%	358.1 3.63% 3%	278.0 3.46% 11-11%	135.7 3.05% 4-1%
	3.61%	3.61% 3.61%	3.61% 3.61% 3.63%	3.61% 3.61% 3.63% 3.46%

Control of the Contro					
Demand deposits adjusted, reporting member banks	58,421	58,384	58,558	57,981	1145,820
Total loans and investments, reporting member banks	85,710	86,513	85,698	85,481	1171,916
Commercial and agricultural loans, reporting member banks	26,396	26,643	26,317	22,237	119,299
U. S. gov't guaranteed obligations held, reporting member banks	29,686	29,957	29,559	36,513	1149,879
Total federal reserve credit outstanding	26,375	26,938	26,428	25,792	23,883

MONTHLY FIGURES OF THE WIEK	and the	Latest Month	Preceding Month	Year	1946 Average
Housing starts (in thousands)	December	75.0	90.0	90.6	55.9
Bank debits (in millions)			\$173,198	\$186,317	11585,577
Exports (in millions)	November	\$1,308	\$1,396	\$1,250	\$812

^{*} Preliminary, week ended Jan. 14, 1956. * Revised.

^{\$\$} Estimate.

Ten designated markets.

⁸ Date for "Latest Weck" on each series on request.

in BUSINESS this WEEK . . .

GENERAL BUSINESS:

WHAT CAR DESIGNERS ARE PLANNING. Model changes will come faster; here are features that will

BUSINESS ABROAD:

THE MIDDLE EAST: REDS EXPLOIT POWER VACUUM. And they could cut off Europe's oil......p. 112

NEW BRITISH DOMINION COMING IN WEST INDIES. Federation will be goalp. 118

COMMODITIES:

MILK INDUSTRY: ITS HOWS AND WHYS. The complexities that determine the price of milk.....p. 172

HOW TO SPLIT UP A RICH MAR-KET. States are imposing production allowables on their natural gas fieldsp. 180

ECONOMICS:

ARE THE ECONOMISTS ALL WET?
A Massachusetis professor weighs methods of economists and finds them wantingp. 90

FINANCE:

A BIG YEAR FOR LOANS, MERG-ERS. Big banks did well profitwise, too p. 72
IN FINANCE p. 78

GOVERNMENT:

ARMY WANTS MORE PLANES OF ITS OWN . . . AND MORE HELP FROM AIR FORCE. But there's Air Force opposition p. 134

IN WASHINGTON. News about antimerger legislation, "minor" budget items, water projects "czar"...p. 140

LABOR:

AFL-CIO SETS UP A POLICE PA-TROL. New committee will keep a vigil on corruption.....p. 43

50-YEAR GOAL NEAR FOR WOMEN WORKERS. After half-century of

								F	age
Business Outlook			,			è		8	17
Washington Outlook	8			×	,	8	*		39
International Outlook	*		8	8		*			145
Personal Business	*	*			*	8		*	167
The Trend			*	,	*	*		,	184
Figures of the Week.									
Charts of the Week			8	*	8		*		170
Readers Report	*	*	*	*	*	×	×	*	8

struggle they have equal-pay-forequal-work in sight.....p. 46

PENSION PLAN . . . for Teamsters gets toehold on West Coast . . . p. 52

MANAGEMENT

PENSIONS: CHEAPER BY THE DOZEN. Rush to form new pension trusts is likely now.....p. 96

AND MAKING BOTH PARTS THRIVE. Canadian Industries Ltd. had to split. The trick was to avoid killing the business.....p. 98

IN MANAGEMENTp. 110

The Pictures—Air Force—135; American Car and Foundry—84; Army Chemical Corps—82; Bettman Archive—50-1 (bot.), 51 (top lt.); C. P. Clare & Co.—46; Grant Compton—51 (top rt.); General Motors Corp.—Cover; George Harris—104; Ingersoil-Rand Co.—88; I. L. G. W. U.—50 (lt.); Linfield College—132; Edith Miller—120 (top lt.); Amador Packer—120 (bot.); Homer Page—50 (top rt.); Shell Oil Co.—126, 127; Sylvania Electric Products, Inc.—86; U. S. Army—134, 136, 137, 138; Wide World—120 (top rt.); Dick Wolters—51 (cen. rt.)

MARKETING:

FLANK ATTACK ON "OVERRIDES." FTC sees exclusive dealing in commission paid by rubber companies to oil outfits.....p. 154

IN MARKETINGp. 158

THE MARKETS:

PRODUCTION:

ALUMINUM TAKES A BIGGER BITE. Big demands in auto manufacture and construction are putting the industry in seventh heaven....p. 80 PLATING THE DRY WAY. New controls revive an old process...p. 82 TAILORED FOR PIGGYBACK. New small flatcar, plus pool operation, promises expansionp. 84 NEW PRODUCTSp. 86

REGIONS:

RESERVED

SKIN DIVERS HUNT CLUE TO HARD-TO-FIND OIL. Clues on the ocean floor may make it easier to find new oil deposits......p. 126

A BIG NEW IDEA FROM A SMALL COLLEGE. An Oregon physics professor may revolutionize the vacuum tubep. 132



Fastest plane. A rocket engine powerplant is designed to shoot the Bell X-2 through space at speeds faster than the record 1650 m.p.h. set by the X-1A. Because

air friction will heat the plane's "akin" to more than 800°F., wings, tail and fuselage are constructed of heat-resisting, nickel-bearing alloys.

At 2½ times the speed of sound there's friction in the AIR!

At supersonic speeds, air friction reaches out a hot, unfriendly hand. Its fiery grasp weakens many metals. Sometimes even burns them away.

The worst of it is - the faster the plane, the hotter the heat!

Still the United States Air Force must aim for speed. And more speed. Their flying research laboratory, the rocket-powered Bell X-2, is shooting for a new record.

As she zooms through the skies, Bell

X-2 will test the metals she's made of — test them against the tremendous heat caused by air friction. Wing and tail metal are heat-resisting chromium-nickel stainless steel. Fuselage skin — K Monel* age-hardenable nickel-copper alloy.

These alloys—and others strengthened and toughened with nickel—are the kind that stay strong and tough at high temperatures. They meet other exacting demands, of course. And they give greater scope to the skill and

ingenuity of designer and engineer.

If you have a problem in which high or low temperatures, corrosion, stresses or fatigue are factors, talk it over with us. Two minds being better than one, we may be able to help you find out how nickel or a nickel alloy can solve a troublesome problem for you.

Write for . . . List A of available publications. It includes a simple form that makes it easy for you to outline practically any problem for our study.

*Reg. Trade Mark



THE INTERNATIONAL NICKEL COMPANY, INC. #7 Wall Street

How much time do your salesmen lose by

DRIVING BLIND?

When a salesman travels to see a customer who's not inor too busy to be seen-that's "blind driving."

It's part of the hard-cash cost of selling. And it's too costly a part to have a place in today's competitive market.

That's why so many sales managers have made it a practice for their salesmen to telephone ahead for appointments.

One sales executive proved that appointments made by telephone saved his company \$5000 a year. Another, with a much larger firm, reported that appointment calls gave his sales force 12% more selling time, worth \$400,000 a year in gross sales.

We can show you how your company can use the telephone most profitably in many ways. Just call your Bell Telephone Business Office. A representative will visit you.

LONG DISTANCE RATES ARE LOW

Here are some examples:

Baltimore to Philadelphia	0	0		55€
Cleveland to Pittsburgh .	0			60¢
Dallas to St. Louis				\$1.35
Atlanta to New York				\$1.50
Los Angeles to Washington,	D.	C.		\$2.50

These are the deytime Station-to-Station rates for the first three minutes. They do not include the 10% federal excise tax.

CALL BY NUMBER. IT'S TWICE AS FAST.

BELL TELEPHONE SYSTEM



A Sharp New Turn in Budgeting

Federal spending will begin to rise

Last Present Budget Pro-Complete Fiscal Year, posed for Next Fiscal Year Now Half Over Fiscal Year 1954-55 1955-56 1956-57

\$64.6 64.3 65.9

...But tax receipts are rising even faster

60.4 64.5 66.3

... Resulting in a modest surplus

4.2 .2 .4 (deficit) (surplus) (surplus)

Here's what the spending is for and where the increases are:

	8111	iens of Dol	lars
National Security ,	\$40.6	\$39.5	\$40.4
International Affairs	2.2	2.1	2.1
Farmers ,	4.4	3.4	3.4
Veterans	4.5	4.8	4.9
Labor, Health, Education, and Welfare	2.6	2.8	3.0
	MIII	ions of Dol	lars
School Construction	\$129	\$94	\$213
	8111	iens of Doll	ors
Natural Resources	\$1.1	\$1.0	\$1.0
	MIII	ions of Dol	lors
Water and Power Projects	\$815	\$729	\$690
	8111	ions of Doll	078
Transportation, Housing and Commerce	1.6	2.2	2.1
	MIII	ions of Doll	ars
Highways	\$647	\$790	\$844)
	Bill	ions of Dell	ors
General Government	1.2	1.6	1.8
Interest on the Public Debt	6.4	6.9	7.1

A massive change is taking place in the spending philosophy of the Eisenhower Administration.

The change is revealed in the new federal budget picture submitted this week to Congress (table). The Administration proudly predicts a balanced budget for the current fiscal year, instead of the \$1.7-billion deficit it expected when the year began. It also discloses plans for a small surplus—\$435-million—for the next fiscal year. Thus, for the first time since 1947-48—when the government was still drawing on huge wartime funds—the budget faces the prospect of two consecutive years in the black.

Equally significant for the business future, dollar outlays by the federal government are going up—not in a temporary rise to meet a particular emergency but as part of a fundamental shift in Administration thinking.

• End of a Taper-Off—The shift marks an end to a series of reductions the Administration has been making since taking over the government in 1953. The Republicans have now done what they set out to do—eliminate what they considered non-essential spending. The period is therefore over when they could knock off huge savings by curtailing Democratic programs. From now on, the Administration will approve greater dollar outlays for the things it believes the country must have for defense and to meet the peacetime requirements of an expanding economy.

This change was faintly signaled six months ago when the Administration took a second look at its spending plans and raised its sights by \$1.4-billion for the current fiscal year. But the extent of the new spending plans was revealed this week for the first time:

 Of the \$1.6-billion rise foreseen for the next fiscal year, \$903-million is for the military—more guided missiles, more continental defense, and higher price tags for all sorts of weapons that are increasing in complexity.

On the civilian side, the Administration is committed to a broad program of more aid to farmers, more roads, more schools, more medical research, aid to depressed areas in the U.S., flood insurance, and the like. Such non-defense increases total \$692-million for fiscal 1957.

The long-run trend is disclosed

in requests for authority to spend in the future, some of it in fiscal 1957 and some later. In budget parlance, these requests are bundled together as "new obligational authority." For the current fiscal year, the Administration has asked new obligational authority totaling \$62-billion. For 1957, it asks for a rise to \$66.3-billion—a jump of \$4.3-billion.

I. Entering a New Era

If the shift is as fundamental as spokesmen for the Administration privately say it is, the budget submitted to Congress by Pres. Eisenhower may well mark the end of one fiscal era and

the beginning of another.

Up to now, a reduction in federal spending has been the goal of fiscal conservatives, including the top policymakers of the Eisenhower Administration. Now, the strategy of the Administration is to allow spending to rise, in the belief that the economy will grow even faster, particularly if helped by the right kind of federal spending. Budget-Balancing—This doesn't mean that the fiscal conservatives in the Administration have abandoned their basic objectives of a balanced budget and a stable dollar. But the method of reaching these objectives has shifted. It no longer rests on a drastic reduction in the over-all size of the government. Instead, it depends on economic growth.

A few key officials still hope that the spending trend can be reversed. Budget Director Rowland R. Hughes, for example, frankly told reporters that he hoped Congress would cut everything in the budget the President submitted.

Some Democrats, indeed, suspect the Administration's 1957 budget of being a political trick—something to attract votes in the November election, then

to be forgotten.

 Basic Change—There may be a few' political gimmicks in the new budget. That wouldn't be surprising in an election year. But the amounts and the nature of the spending proposals show how deeply the Administration is committed to its new approach.

The best way to grasp the magnitude of the Administration's new ideas about spending is to compare dollar outlays proposed a year ago with those pro-

posed this week.

Last January, Eisenhower submitted a budget for the current fiscal year calling for expenditures of \$62.4-billion, which Congress raised to \$64.3-billion.

 The budget he submitted this week calls for \$65.9-billion—a jump of \$3.5-billion in the amount requested.

In the intervening 12 months, there has been no major war scare. Nor has the government been forced to increase spending to try to halt a depression—

we are at a new all-time high for business, with the economy spinning at a \$400-billion-a-year clip (page 33). Thus, the spending increases are not linked with emergencies; they rest on world conditions that the Administration is by itself powerless to change, and on what the Administration believes are the domestic needs of the country in a time of record-smashing prosperity.

These decisions have not been lightly made for political advantage. They have been accompanied by a great deal of soul-searching. They have been accepted with the greatest reluctance by such spending watchdogs as Treasury Secy. George M. Humphrey. But once in the picture, they will not be dropped. If Congress accepts Administration leadership, the rise in spending will be an integral part of the budget for next year and other years beyond.

II. Business Significance

The implications for business are enormous.

Spending. The downward trend of federal spending since Eisenhower took over is being reversed. The \$64.3-billion foreseen for the current year is a slash of \$10-billion from the amount spent during the year of the Eisenhower take-over. It is a cut of \$13.6-billion from the amount proposed in Harry Truman's last budget message. All this is now a matter of fiscal history; from now on, the Administration sees a period of gradual rise in spending.

Tax cuts. The chance of a reduction in the corporation income tax is greatly reduced for years to come. As a rough guide to the Administration's fiscal thinking, you can rate its objectives in this order: (1) the rise in spending, (2) modest reductions in the public

debt, (3) tax reductions.

Thus, tax reductions will come only in the context of rising spending and balanced budgets. Secy. Humphrey is emphatic on this point. As far as he is concerned, there will be no tax reduction message later this year unless there is in sight a budget surplus on the order of \$2-billion or \$2.5-billion.

When tax reductions are possible, the first will plainly go to individuals. This puts corporate tax reductions near the bottom of the fiscal heap. Indeed, the best chance of a corporate tax cut in the next year or so would seem to be in the unhappy circumstance of a general drop in business activity. In that case, Congress might include one in a general tax reduction.

III. The Economic Assumptions

On the receipts side of the budget, the Administration is calculating on the low side, but not by much, unless the economy takes another unexpected leap forward. If the economy grows at about 4% this year, measured in gross national product—as Eisenhower's economic advisers would like—the revenue guess is likely to be correct within \$1-billion either way.

 Tax Revenue—The tax take depends, of course, on how good business is. Here's how the Treasury sees the picture, assuming that Congress extends

taxes at present rates:

Personal income is expected to rise from \$302.5-billion in calendar 1955 to \$312.5-billion in 1956. This will yield an estimated \$1.6-billion rise in income taxes. The personal income gain as seen by the Treasury comes to about 4%, which lines up with what the Administration would like to see for the economy as a whole.

Corporation profits are estimated by the Treasury at \$43-billion for 1955, and the same for 1956, with the same tax take each year—\$20.3-billion.

Secy. Humphrey admits it may be unduly conservative not to count on a rise in corporate income, but he insists it is the safest thing to do in the present business situation. He sees the possibility that price cuts will hold profits in check this year as industry scrambles hard for the consumer's dollar. Even if corporation profits should gain 4% or so along with personal income, it would hardly be a windfall for the Treasury; additional taxes would be less than \$1-billion.

Excise taxes are expected to be practically a standoff if present rates are extended by Congress—\$9.8-billion each

vear.

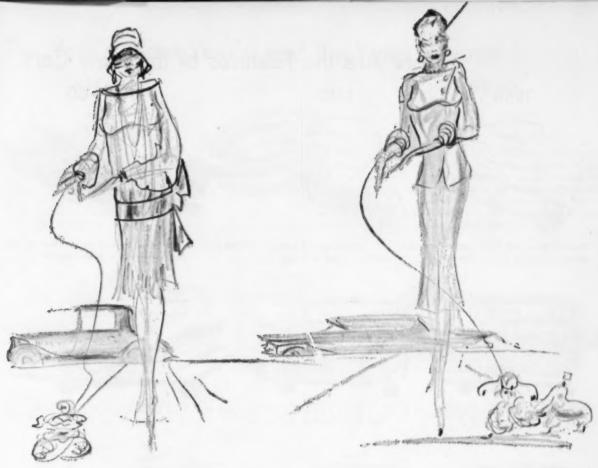
IV. The Cash Budget

One reason for caution in Washington is the switch in the so-called cash budget, which economists use to assess the business impact of federal spending. Unlike the traditional budget, the cash budget includes sums paid by the public into trust funds for old age and survivors' insurance, unemployment compensation, veterans' insurance, and the like. It, therefore, shows the actual flow of dollars in to the government, and out to the people.

In fiscal 1955, the government paid out \$2.7-billion more than it took in; the cash budget was putting money into the economy. The outlook now is the reverse: The government is expected to collect \$2.4-billion more in

fiscal 1956 than it pays out.

By itself, \$2.4-billion is not too important in a financial structure so gigantic. But the economic impact of the budget has shifted a total of \$5.1-billion in a year—from slightly on the stimulating side to slightly on the depressing side—and some government economists are wondering if this isn't a big enough shift to make a difference.



WALL

What Car Designers Are Planning

In Detroit a few days ago, George Walker, Ford Motor Co.'s vice-president for styling, was telling a visitor about the ideas for the future now swirling around in the automobile business. As he elaborated, he hastily dashed off the sketch above. The sketch makes plain the creed of Walker and his fellow auto stylists: Automobile styling should reflect the car buyer's tastes and his entire atmosphere of living.

Detroit has some striking ideas about the car buyer's future tastes and mode

of living.

 Early View—You'll see some of these ideas reflected later this year in the 1957 cars. For with those models will come tangible proof that the auto industry has launched itself on a new cycle of design and engineering—and that the stylists sit in the top policy councils in Detroit.

Some sense of what the new automotive era will be like comes from the auto makers' "experimental" cars. Ford, Chrysler, and Studebaker-Packard showed their experimental models at the Chicago auto show two weeks ago. This week, General Motors, the historic pace-setter, unveiled its ideas of future models at its annual Motorama in New York. The show-piece in New York was a new turbine-powered auto, Firebird II (cover).

• Firebird Forecast—Firebird II is not intended for production in the near future. But it does demonstrate that the industry is ready now to move along new engineering and styling paths.

Firebird probably contains more new engineering ideas than any car ever shown (BW-Dec.24'55,p25). GM knows, and its competitors also know, that the auto industry's engineering has advanced so far that there is little competitive advantage to be lost by giving the public a peck at what's ahead.

The same holds true for the styling trends discernible in the other show cars, those of GM at the Motorama, and those exhibited by other manufacturers. In most auto industry circles there is no particular reluctance to point out how these cars forecast the future. This is especially true among GM's competitors. They've smarted too long under the giant company's

leadership in both styling and engineering. Now they are out to establish their own strength in those two areas.

I. Styling Points Way

All the auto industry's best-known stylists—GM's Vice-Pres. Harley Earl, Ford's George Walker, and Chrysler's styling director Virgil Exner—have backgrounds in industrial design. They're always quick to point out that their jobs in the auto industry represent only the extension of what's been going on for 25 years in scores of other industries. Designers have worked over furniture, appliances, and thousands of other products to achieve clean flowing lines, with decoration integrated into the design.

"The consumer," says Walker, "expects just the same treatment of his car. And so," he says pointing to his sketch, "this woman on the right wouldn't take that car on the left."

Four Approaches—The stylists' theory, then, is simple. But just look into its practical application. To achieve what they believe the modern car buyer

Here Are the Features of the New Cars . . .

1956

1957

1958-59-60



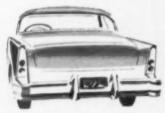
Separate frame and body auto construction already gives way to new idea of . . .



. . . semi-integrated unit, with major parts welded in, and next may come . . .



. , . fully-integrated body, where all support members are welded together.



Stylists get hold of autos' tail fins and to make car more eye-pleasing . . .



. . . they'll set them at an angle and enlarge them, opening the way to . . .



. . . big horizontal fins that become part of "sculptured" side panels.



Wraparound windshields started the trend toward large new use of glass, and next . . .



doors, windshield, before moving on to . . .



. . . the ultimate design: an all-glass canopy that adds air of spaciousness.



Headlamps are worked deeper into car's over-all design through first step of . . .



. . , enlarging turn indicators for eventual role as city-driving lights, and . . .



. . . finally getting retractable lights that will be covered when not in use.

wants in his auto, the stylists are proceeding along four main lines: Less Chrome. They want to slice a

Less Chrome. They want to slice a lot of chrome off the sides of new cars. To give a car "character" they'll "sculpture" its sides—put large indentations along the length of the car.

Lower Bodies. The decreasing height of cars gives engineers plenty of headaches. But stylists insist a lower car is a better-looking car. So cars get lower.

The 1957 cars will be an inch or two lower than the 1956 models. But this may take cars to their minimum height

for a while. Until major engineering changes are made-transmission systems redesigned and new braking systems developed-height cannot be reduced more than a couple of inches.

Tail Fins. The stylist believes that the sweep from a high rear fender to

This Year's, Next Year's, and the Years Beyond

1956

1957

1958-59-60



Drum-type brakes pose problem on smaller wheels, so engineers turn to . . .



. . . disc brakes, where air-cooled disc is squeezed between two non-rotating discs . . .

... but, for the future, entirely new braking systems are on the way. One of these might be a magnetic system in which braking power is applied by electrical reversal of magnetic field. In another system, hydraulic fluid could be fed, under pressure, against vanes on auto wheels to stop car.



Present pistons have about reached top efficiency, so engineers plan to use . . .



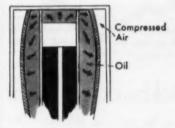
. . . pistons with concave tops for better detonation. Meanwhile, industry awaits . . .



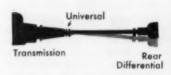
. . . the gas turbine engine, which is approaching efficiency of piston engine.



Coil and leaf springs limit lowering of cars, so in their place GM plans . . .



. . . an independent air-oil unit for suspension of new, lower cars. But eventually air-oil unit could be connected to a central hydraulic system that would handle all power-operated devices in the car. In suspension unit of such a system a piston connected to the wheels would force oil out through holes into a chamber surrounded by a rubber wall. Oil pressure would push the rubber into outer chamber filled with compressed air. This would cushion car against bumps.



Single-piece drive shaft impedes lowering of car, so shift is now toward . . .

a lower front end pleases the eye. So tail fins will sprout larger,

More Glass. The auto stylist looks at the lighter, more airy homes being built these days—and then announces that autos will keep following a similar trend. He is certain that some day even



. . . split shaft fitted with a universal joint in middle, then perhaps to . . .

six-passenger sedans will be topped with a bubble-type canopy.

Integrated Bodies. This is the biggest change in prospect. American Motors already uses integrated bodies those in which frame and body are welded together to form one unit. All . . . split shaft combined with rear-end transmission, adding space to car interior.

Universals

Rear Transmission

companies are studying this method of construction. The 1957 Cadillac may have a semi-integrated body. Cheyrolet already has one in which the firewall is welded to the frame. But the change, if made, must move slowly through the industry, because assembly of a car with an integrated body requires complete reconstruction of assembly lines.

To reach each of these styling objectives auto makers are pressing for new engineering developments. Some of these developments will begin to show up in the 1957 models.

II. Engineers Find Paths

The mechanical parts of 1956 cars have about reached their maximum development in their present form. To achieve better performance—or to accommodate the stylists—the engineers have to strike out in new directions.

 Engineering Promises—Again, you get an indication of what's to come from the mechanical features of GM's Firebird II. But you should also remember that the same engineering objectives can be reached in different ways. As with styling there are four

basic changes in sight:

New Brakes. To get cars lower all 1957 models, except Cadillae and possibly some other GM lines, are switching from present 15-in. wheels to 14-in. wheels. This reduces the braking area—and the effectiveness—of present drumtype brakes. So you will find disc brakes on most 1957 cars. For the more distant future, these appear as gleams in engineers' eyes: (1) a magnetic brake, (2) a new hydraulic braking system.

(2) a new hydraulic braking system. New Engines. Some high-priced 1957 models may offer fuel-injection engines (BW-Oct.22'55,p83) as optional equipment, though the industry isn't ready yet for widespread use of this engine system. But one short-range improvement will be more general next year: A concave piston that gives better fuel distribution and detonation. The eventual engine development, of course, is the gas turbine.

New Suspension. The industry seems headed toward some combination of air and oil suspension. In 1957, Cadillac, Buick, and Oldsmobile probably will have such a suspension system.

New Drive Shafts. Developments here are aimed at getting the car lower. Engineers made one step ahead in their efforts with Ford's Continental. Its drive shaft has a universal joint in the middle, which reduces the size of the drive shaft tunnel between the seats without letting the shaft bump against the floor of the car. In 1957, Ford will put this split shaft into its other cars, and other auto makers will follow suit.

But the engineers are likely to find a long-range solution by splitting the drive shaft in the middle and also placing the transmission at the rear end.

The really notable thing about all these styling and engineering changes is that they are bursting upon the public almost simultaneously. This is contrary to auto industry tradition. And the break from tradition gives the clue

to important changes in the industry's competitive structure.

III. Evolution at Work

Until now, there have been two notable evolutionary cycles in the auto industry. The first began about 1922, lasted until 1939. This was the cycle when all emphasis was on comfort, convenience, and safety. It produced closed cars, safety glass, four-wheel brakes, trunks, automatic windshield wipets, low-pressure tires, radios, heaters.

The second cycle began in 1940, lapsed during the war years, and picked up again in the late 1940s. In this cycle, emphasis was almost all on engineering. GM's Hydra-Matic transmission, installed in the 1940 Oldsmobile, was the first tangible sign of the cycle. After that, the engineering emphasis produced all the other fully-automatic transmissions, power steering, power brakes, and other power devices.

 Sales Discovery—This is the cycle that's now ending. Toward its end came a development that turned the auto industry inside out: Sales managers discovered styling alone could sell cars.

Today, the word of the stylist holds greater power at the top policy levels in

auto companies.

 Leadership—In the cycle that began in 1940, only GM could dominate, because only GM was able to fit both stylist and engineers into its policy councils. GM could, and sometimes did, bring out new models loaded with both styling and engineering changes.

But as the newest cycle began to evolve, Chrysler, Ford, Studebaker-

Packard, and American Motors established full-fledged styling departments. So now all auto companies are able to integrate styling and engineering.

This is the factor that has the industry in a ferment. Ford makes no bones about its intention to try to take styling leadership away from GM-beginning with its 1957 models.

 Model Every Year?—The ferment has a second important facet. In the days before stylists began to rule the roost, most companies changed models when they thought GM would change. That led them into a three-year model change cycle. But in 1957, Ford, Mercury, all Chrysler cars, Studebaker, and Packard will have new bodies—only two years after their last model change.

Some leaders in the industry say that so many cars are being sold now that it has become economically feasible to change car bodies every year. Greater production capacity also has some influence on this. Just this week, GM Pres. Harlow H. Curtice announced his company this year will pay out \$1-billion for new plants and equipment, mostly for auto facilities. One-quarter of this money is a new commitment added to GM's program in the past year.

But despite the new facilities and increased sales, some experts claim that higher production costs will force auto makers to stretch out the major model change cycle to four or five years.

Whatever the correct position, the disagreement does point up this basic fact about today's auto industry: It is now possible for all companies to change their cars whenever they wish. That's what gives Detroit a new kind of auto industry.

Kickback on Tight Credit

For the past year, the Federal Reserve has been tightening up its antiinflation clamps in an effort to restrict credit, especially consumer credit. As the screws pressed down harder and harder this fall, bankers wondered just who was getting hurt and just how long the sufferers would stand still for it.

This week, they got their answer.

• Too Tight-Harlow H. Curtice, president of General Motors, cut loose with a blast at the money managers that surprised everyone by the bite of its language.

guage.

"Consumer credit, and particularly automobile credit, currently is receiving attention in high quarters that, in my opinion is entirely out of proportion to the need . . . it is a pretty delicate subject for any group of men to endeavor to tamper with."

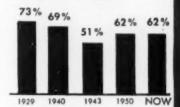
The core of Curtice's argument is that if you want sales to rise, you have to let credit rise, too. So, he concluded, "I regret very much that the present restricted policy is in effect and I sincerely hope that those who are responsible for it will change back to the normal policy of making credit free and available."

• Switch—Actually, the Federal Reserve already had decided not to tighten the screws any further (BW—Jan.14 '56,p23), though it isn't yet ready to do any real easing. However, Allan Sproul, president of the New York Federal has been urging specific controls on consumer credit in addition to the present general controls. Curtice's protest demonstrates that even the general controls pinch painfully.

Even giant General Motors Acceptance Corp., GM's financing affiliate, has been feeling the pinch, like all the other finance companies in borrowing the funds it needs. As bankers see it, there simply isn't enough money available now to finance all the plans for expanding sales and expanding plant that industry has announced.

Now-a \$400-Billion Economy





Consumers spend a smaller share...

CONSUMER INVESTMENT

6%	5%	1 %	8 %	7%	
1020	1040	1043	1050	MICHAL	

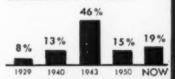
... But invest slightly more than in 1929...

AUTOS

2 1/2 %		3 1/2 %	- 1-
1929		1950	

... With most of the gain going to autos.

GOVERNMENT SPENDING

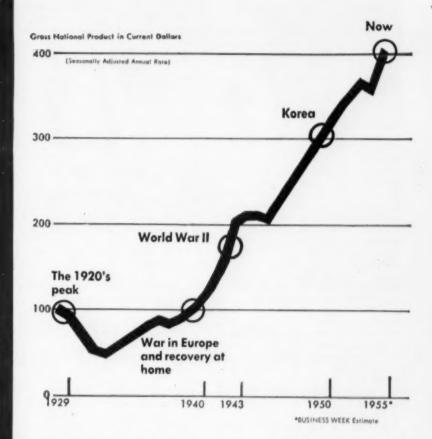


Biggest change has been in government . . .

DEFENSE



... And particularly in defense spending.



THE U.S. economy has passed another milepost—we are producing goods and services at an annual rate above \$400-billion (charts). Few noticed the milestone as we passed it, or felt any bump in the road; the crossing was as routine as a banana boat plowing through the equator.

Most economists believe gross aational product will maintain the \$400-billion annual rate for the first quarter of 1956. Actually, GNP probably nosed through the \$400-billion barrier in December, with a hefty shove from Christmas. For the whole fourth quarter, the annual rate was \$397.3-billion, but the trend all along was upward, which makes it pretty certain that December was over the mark.

• How It Started—Whatever the moment, it was the fifth time in 26 years that the U.S. economy has passed a \$100-billion GNP marker. The first \$100-billion was the hardest; it took

two tries. The first crossing came in 1929 after the steady upward pressure of the boom in the 1920s. Everyone knows what followed that—the Depression and the 10 scrawny years of the 1930s.

Finally, recovery at home and war in Europe got us back across the \$100-billion line for the second time, in 1940. Then things moved fast. With the U.S. deep in World War II we passed the \$200-billion mark in 1943. Seven years and another war later Korea shoved us above \$300-billion in 1950.

 Family Portraits—Now we've passed the \$400-billion line. Which brings up the question: Just what does this giant economy look like, and how close is its family resemblance to those other, earlier giants that seemed too huge in their own time?

For a starter, all of them do have a feature in common, a sort of Hapsburg chin among economies. This is the dominance of consumer spending, which in every case makes up way over half of the total, with business and government supplying the rest.

In detail, though, the resemblance fades. If you break down the different things on which families, businesses, and governments spend their money, you find that the \$400-billion economy is quite a bit different from its ancestors.

Take family spending, which has slipped from its 79% of the total in 1929, but is still a hefty 69%. In every breakthrough year-except war-restricted 1943-consumer hardgoods (if you leave out homes and autos) have taken about the same share of the total. But there are marked changes in other areas. Thus consumer softgoods moved down from 36% in 1929 to 32% now.

· Up and Down-As for homes and autos, they are taking a bigger share of today's \$400-billion economy than they did of the \$100-billion model in 1929.

Biggest change of all has been in the spending for consumer services. In 1929, these absorbed 31% of all GNP spending. In 1943, when war was swallowing manpower, the figure dropped to 18%. Now it has climbed backbut only to 24%; you can almost say that the domestic servants of 1929 are working for the government now.

· The Other Spenders-In every milestone year, except for 1943, business has cut itself approximately the same sized slice of the spending pie. Government, on the other hand, has been very volatile. In the piping peacetime of 1929, it contented itself with a modest 8%. That rocketed, naturally enough, to 46% at the 1943 spending peak of World War II. This had fallen off to 15% in 1950-when Korea was just beginning to drain our resources-but has climbed back to 19% now.

Since the big war, the biggest shifts have come in the caretaker functions of government-federal, state, local. In 1950, these functions absorbed 8% of total buying, now they are up to 11%.

Steel's New Expansion Won't Stop Price Hike

Steel's new expansion plans don't end steel's problems.

American Iron & Steel Institute's Pres. Benjamin Fairless said this week an AISI survey finds the industry planning to add 15-million tons annual capacity in the next three years.

But 1956's expansion will cost the industry \$1.2-billion-or \$240 an annual ingot ton compared with the average \$194 a ton cost of previous postwar expansion. This added cost shows why: (1) steel's biggest problem is financing future expansion, and (2) steel prices will keep rising.

Ford Stock: Off and Running

Trading in the long-awaited issue pushes bids quickly to a premium over offering price—but not so much as some had hoped.

"It's all over but the pouting."

The

That was the crack of one underwriter of the Ford Motor Co. offering who, like his cohorts, had been in the unhappy position of telling good customers that they would get only 10% to 20% of the Ford shares they wanted.

giant offering-10.2-million

shares adding up to \$657.9-million-was every bit as "out the window" as expected. Blyth & Co., syndicate head, kept books open until 4 p.m. on Wednesday, simply so 8,300 Ford car dealers and 3,800 key Ford employees could have time to buy the 1.5-million shares set aside for them. The actual sale of the stock took only as much time as it takes electronic bookkeepers to dole out the shares in some percentage of what had been requested. · Price Higher-The price of the stock -\$64.50 per share-was the key statistic in the offering. For one thing, it was higher than most Wall Streeters had expected after a look at the slumping stock market in the first two weeks of the new year. The underwriters themselves said officially that the price had been arrived at "after the most diligent consideration by the managers and the Ford Foundation." Unofficially, a member of the managing syndicate said, "We really prayed over this

· Warm Debate-It's no secret that the price negotiations were marked by heated discussions between the underwriters and the Ford Foundation. The foundation would have liked a better "take home" price-it will get \$63 per share, a total of \$642.6-million. The underwriters argued that a higher price would meet resistance. They held out for a price that would put Ford, statistically, somewhere between General Motors and Chrysler.

· Yardstick-The underwriters agreed that the price-earnings ratio and yield for General Motors was "the closest statistical yardstick" they could find (BW-Jan.14'55,p102). On the basis of the offering price, Ford will sell at around eight times earnings, while GM sells around 10 times its 1955 earnings. Ford yields 4.6% on the basis of expected 1956 dividends of \$3 per share, while GM yields just a shade less, around 4.54% on the basis of its expected 1956 dividend of \$2 per share.

· Opening Trade-Once the price was known, Ford stock began trading in Canadian over-the-counter markets. (It

couldn't trade in the U.S. until the Securities & Exchange Commission had cleared the registration statement.) The first quote that hit New York showed a bid of \$68.50 for the stock, a premium of \$4 over the offering price. SEC didn't clear the final registration statement until 4 p.m. on Jan. 17, and there was little activity in New York until the following morning.

On the West Coast, the bid price got as high as \$70.25. The New York price closed around \$68 after hitting \$71.25 early on the morning of the

first day of trading.

· Standing Room Only-In the first day, activity was terrifically heavy, straining the capacities of the nation's over-the-counter houses. Members of the underwriting syndicate couldn't trade over the counter until books were closed. This meant that the 722 underwriters and more than 1,000 sellers were blocked out of the picture for the

The most surprising thing about initial trading was that so many large blocks of stock showed up. Traders didn't seem to know where such blocks came from, but obviously some institutions and individuals had assembled large blocks of stock through duplication of orders with many sellers and were taking a quick profit. The slim premium on the first day made freeriding unprofitable unless you had a fairly sizable block.

· Institutions-The role of the institutional investors in the offering attracted interest. The foundation had agreed to set aside about 10% of the 10.2-million shares for group sales to institutions.

The biggest single block sold-30,000 shares-went to an insurance company. Investment trusts, pension funds, universities, and foundations all were big

buyers of stock.

 Underwriters' Reward-For their trouble, the underwriters of the issue will get \$1.50 per share, or around \$15.3-million. Charles R. Blyth, president of Blyth & Co., pointed out that commissions are only 2.32% of offering price, "the lowest on record where distribution is made directly through underwriters.

But a Wall Streeter sitting in the midst of frantically ringing phones last Monday remarked: "Of course, it's the easiest selling job we've ever had-most of our time was spent beating the customers off."

TRUCKING . . . Vital Transportation Link



Consolidated Freightways cuts trip time on "New Oregon Trail"...with Fuller Semi-Automatic ROADRANGER® Transmissions

Consolidated Freightways, Inc. covers 19,443 miles of regular and alternate routes between 900 communities out of Portland, Oregon ... hauling maximum payloads over more diversified mountainous paths faster than were ever dreamed of in "The Old Oregon Trail" days.

The "boost" that irons out the mountains for Consolidated is the Fuller 10-Speed R-950-C Semi-Automatic RoadRanger Transmission in every one of their new White Freight-liner tractors. Says Consolidated's Chicago Shop Manager Clarence Gaughan: "You can't beat the Road-Ranger's single gear shift lever operation. They keep road speed up on hills." Gaughan likes RoadRangers

too, because, he says: "They keep engine speeds in the maximum horsepower range . . . because of the short 28% steps between gear ratios."

Consolidated extends three main "new Oregon Trails" eastward covering every tough driving condition. The Portland, Seattle, Fargo, and Chicago "trail" is winter driving at its toughest. The route through Walla Walla, Billings and the Twin-Cities to Chicago is more of the same, and the course via San Francisco and Salt Lake City to Chicago throws in miles of blazing hot, dry, sand-blown desert terrain. Along the coast, Consolidated Freightways' operations reach as far as Los Angeles where the company maintains one of the

most modern motor freight terminals ever built.

Yet Fuller Semi-Automatic ROAD-RANGER Transmissions help "pull'em through on schedule." They're easier on the drivers, too . . . and assure real fuel economy, because they have what it takes to provide the right gear ratio at the right time to meet every varying condition of traffic, time, temperature and terraln.



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HOLDS 40 TIMES MORE INK than ordinary fountain pen. Needs no attention for months on end. CHOOSE THE RIGHT POINT for the way you write by number. More than 30 point styles.

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BUSINESS BRIEFS

Blessing full of its. A federal judge in St. Louis has O.K.'d merger of Brown Shoe Co. and New York's G. R. Kinney Co.—with a string of conditions. All Kinney assets must go into a Brown subsidiary; Kinney must have separate management; no Kinney stores can be closed for competing with Brown. The whole deal is a stopgap pending decision of the federal antitrust action against the merger.

Butter spreads again, says the Agriculture Dept. Housewives bought 4% more butter last November than in the 1954 month. Oleo sales dropped by the same percentage.

Grace Line has signed with the Maritime Commission for a \$286-million program to replace 26 ships over a 20-year stretch. Two 20,000-ton passenger liners will come first. They'll cost about \$46-million together, with the commission chipping in \$20-million to cover defense features and the difference between costs in U.S. and foreign yards.

December's data: Industrial production, seasonally adjusted, held about even with November, says the Fed. . . . Homebuilding contract awards in December were 7% below the 1954 month in the 37 eastern states, says F. W. Dodge Corp.

Cheaper by the dicker: Asst. Army Secy. F. H. Higgins told a House committee that the Army can get better prices by negotiating contracts than it does by competitive bidding.

Use and export of oil will rise about 4.7% in the U.S. this year, the Chase Manhattan Bank estimates, to a daily average of around 9,165,000 bbl. The increase in use might even be 6% if the economy steps up still further, says the bank.

Higher education is getting another hand up, with the announcement of 226 grants totaling more than \$1-million by the Esso Education Foundation. Colleges and universities got the money for use during the current academic year.

Consolidating the books: Boorum & Pease Co., of Brooklyn, major maker of bookkeeping equipment, has bought Syracuse's McMillan Book Co., a top manufacturer of loose leaf binders and forms, and its subsidiary, the Trussell Mfg. Co., of Poughkeepsie. The price: \$1.5-million. McMillan and Trussel are expected to operate as separate units.

Will The Nation's Business Double... in the Next 25 Years?



Gross national product, the total value of the nation's output of goods and services, measured in a constant price level, should <u>double</u>, according to a careful estimate, in the next 25 years.*

This projection is based on the consumer needs of America's expanding population and implies the ability of American industry to increase productivity per-man-hour under the free enterprise system. Opportunities for expansion by both capital and consumer goods industries are apparent.

Availability of funds to take advantage of these opportunities as they arise is a prime consideration in the planning of growth-minded executives.

The credit requirements of large and

small corporations in a wide variety of industries are met promptly and resourcefully at The Bank of New York, a commercial bank for the past 171 years.

The services of this Bank are geared to the banking needs of corporations in today's expanding economy.

Based on our projection of Materials Prepared For The Joint Committee On The Economic Report.

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LIBERTY MUTUAL

The Company that stands by you



College for muscles

More than 3100 men and women can testify to the amazing work of the two famous Rehabilitation Centers operated by Liberty Mutual for badly injured employees of Liberty policyholders. Above is a scene in one of the Centers,



"I HAD A HYSTERICAL WOMAN TO CALM DOWN. Her car was damaged and it was my fault. I called up the Liberty Mutual claimsman — asked him to talk with her. She hung up smiling. In a few days she thanked me for the way her car was fixed." Fast, fair claims service is one reason why Liberty is your best buy in car insurance.

with patients engaged in supervised exercise to retrain muscles and limbs. 87% of all cases admitted have been improved by treatment, and of the 3100 improved cases, 82% were returned to work as useful, self-supporting citizens. Liberty's consulting medical specialists, physical therapy, prosthetic service, personal counseling, aptitude testing, job retraining — all combine to restore work ability. Liberty's rehabilitation program benefits the injured, reduces insurance costs.



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CUMPENSATION, ACCIDENT AND HEALTH,
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NEW IDEA KEEPS BUILDINGS SAFE FROM DYNAMITE BLASTS. An instrument developed by Liberty Mutual engineers measures ground vibrations, tells exactly how much dynamite will be safe. This is typical of Liberty's research for the sake of human safety and loss-prevention. Research such as this also helps keep insurance costs low.

WASHINGTON OUTLOOK

WASHINGTON BUREAU JAN. 21, 1956



The tax cut outlook, in the light of Eisenhower's new budget

Corporations will pay 52% on this year's profits. There's no chance that the automatic cutback to 47% on Apr. 1 will take place. Congress will postpone the drop for at least a year, maybe indefinitely.

Excise taxes will stay at present levels. Scheduled reductions on Apr. 1 for gasoline, liquor, autos, etc. will also be deferred. Possible exception: the auto tax. If sales are sliding this spring, a cut may be O.K.'d.

Individual income tax rates are less certain. The election-year Congress would like to vote relief. Right now, both parties are supporting the line that the balanced budget comes first. But below the surface of the public comments is a rising pressure for individual relief.

Decision time on individual income taxes will be spring. By that time, Congress will have a better feel of the Eisenhower spending plans and a better focus on revenue prospects. The business outlook also will play a part. If recovery from the seasonal downs of winter seems uncertain, a push to cut individual tax bills is certain—to stimulate spending. Meantime, Eisenhower's budget figures will become a political issue.

Note the big swing in budget figures from a year ago (page 27).

Start with spending: Last January, Eisenhower put the outlay for the year ending next June 30 (fiscal 1956) at \$62.4-billion. The figure now is up \$2-billion to \$64.3-billion. For fiscal 1957, starting in July, it's \$65.9-billion.

The receipts side of the budget is shifting even more. Last January, the budget put tax collections at \$60-billion for this fiscal year. The new estimate is \$64.5-billion. The fiscal 1957 figure is \$66.3-billion.

It's a balanced budget. The \$2.4-billion deficit forecast last January is now a \$230-million surplus. The 1957 surplus is put at \$435-million.

Congress suspects some polities. The feeling is not confined to Democrats. Reaction is that current-year income was deliberately played down to halt the Democratic tax cut last year. Many members of both parties read the new estimates as conservative on the receipts side, liberal on the spending side. You saw the reaction of Sen. Harry F. Byrd, the Senate spending watchdog. That's why spring prospects may make for an individual tax cut.

Optimism on the business outlook will make news next week, when the yearly feport of the President's economic advisers goes to Congress.

Here's what the economic advisers will say, in brief: 1956 will be a good year for business, perhaps even better than 1955. Basic forces in the economy look sound and strong.

There will be some cautioning against raw material and inventory speculation—a warning that these could lead to trouble.

Danger of a late-1956 business slide will be recognized. But this will be played down. Idea is that business and government policies can be geared to avoid anything serious.

Here are the business statistics being closely watched by the officials who advise the President on the business outlook and economic policy:

WASHINGTON OUTLOOK (Continued)

WASHINGTON BUREAU JAN. 21, 1956 Consumer durable sales: They showed a drop from a \$37.2-billion rate in the third quarter of 1955 to \$35.7-billion in the fourth quarter. Slowing sales of automobiles accounted for most of this.

Consumer savings: These showed a fourth-quarter rise, from a rate of \$17.7-billion in the third quarter to \$19-billion in the fourth. The big factor here was an increase in payments on installment debt.

Business inventories: These increased \$5-billion in the fourth quarter, as measured by the seasonally adjusted annual rate, compared with a rise of \$2.4-billion in the third quarter.

If spring does indicate a decline, then what? The Administration has plans. It may not detail them to Congress next week. But they are known.

Credit will be eased. You saw the first step this week. The Administration returned to 30-year mortgages—up from 25 years—on FHA and VA housing. It was concerned that the current slump in VA appraisals would result in fewer starts later.

Taxes will be cut. The Administration likes its balanced budget. But it will sacrifice it, if necessary, to give business a boost.

Then, there's spending. The budget schedules a rise. But whether the rise is fast or slow will depend on the business outlook.

Legislation will start moving shortly. There's no schedule for the session. That will come later. The Democrats, in control in House and Senate, are starting with last year's holdovers—bills that got out of committee but were left short of floor action at adjournment.

Elsenhower will sign the gas bill if it reaches the White House. That's the House-approved bill, now up in the Senate, to relieve producers of natural gas from Federal Power Commission rate control.

The Senate will take up the sugar quota bill next if the Finance Committee brings it out. Aim is to give domestic producers a bigger share of the rising domestic market, at the expense of offshore suppliers.

Social security liberalization is high on the Senate list. Democrats last year put through the House a lower retirement age for women, tied in with bigger benefits for the disabled. Strong GOP support is anticipated, despite the fact that the bill anticipates later action to give everyone a lower retirement age. Costs will be tremendous.

Farm aid: Most Democratic leaders will insist on a return to 90% price props, though some are softening on this and leaning to some features of the Benson program; Senate Agriculture Committee Chmn. Allen Ellender is one of these Democrats. But the Democratic party line is to ram a 90% bill quickly through the Senate. The House passed a 90% bill last year.

The Administration is trying to counter this move. The politics of it is this: If the Benson plan is to help farmers before next November's election, it must be voted by spring. Farmers would be in line for around \$1-billion through acreage cuts and the soil bank. If the decision is late, benefits would be delayed until next year.

That's why Democratic leaders think they have the edge. If they can get their 90% bill passed, and Eisenhower then vetoes it, Democrats can delay action on the Benson program.



GLOBE-WERNICKE makes business a pleasure

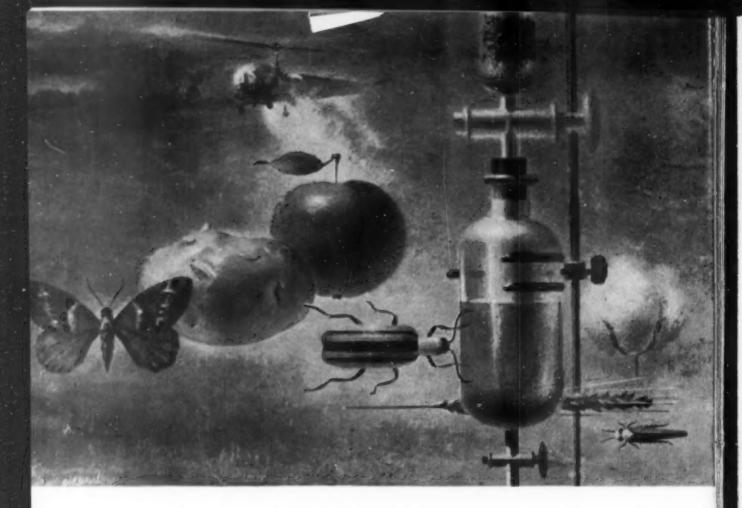


Pleasure begins in satisfaction; and your satisfaction begins the moment you sit down at your Globe-Wernicke Streamliner desk, confident that you have the most advanced metal office desk in America. The bold beauty and sound functional design of the G/W Streamliner makes it the most popular choice of discriminating executives and professional men who want only the best.

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CINCINNATI 12, OHIO



Chemistry performs miracles down on the farm

Development of farm chemicals spurred by bank loans

The chemical revolution on the farm is as responsible for the farmer's zooming production as his tractor and combine. Chemicals now enrich soil, make war on about 10,000 kinds of insects, kill weeds, reclaim wasteland, help livestock grow faster on less feed, fight plant disease, and even keep apples from falling.

The farmer has tripled his use of fertilizer since 1940, and uses five times the quantity of pesticides. During that time his production jumped one-third, although farm acreage remained about the same.

Farmers can now choose from thousands of chemical compounds ranging from insecticides and soil fumigants to hormones and antibiotics. Last year, they invested over \$400 million in pesticides alone, and two and one-half times that amount in fertilizers. Result: an all-time farm production record!

To develop these agricultural chemicals from the experimental to the production stage has often required a large capital investment. A lot of this growth capital was supplied by The First National City Bank of New York.

Backed by nearly \$7 billion in resources, First National City bankers are in a good position to make the large loans needed to finance new laboratories and plants. Domestically, we finance the distribution of farm chemicals directly and through correspondent banks. And through our 60 Overseas Branches, plus correspondents, First National City bankers can also help expedite sales and distribution abroad.

When you put your banking into the hands of First National City bankers, you get complete, professional service that extends far beyond the negotiation of loans from officers thoroughly familiar with all financial aspects of your business. That's why it will pay you, next time a financial problem arises, to consult a First National City banker.

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NATIONAL CITY BANK
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First in World Wide Banking

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AFL-CIO Sets Up a Police Patrol

- Ethical Practices Committee will try to ferret out racketeering, corruption, and subversion within labor's own ranks. It may set up a code for unions.
- How well the committee does its job may determine the ultimate success of the merged unions.
- A few failures could bring pressure for policing from the outside by states or federal government.

A 54-year-old, gray-haired union official with the scholarly calm of a professor heads one of the most important operations of the new American Federation of Labor & Congress of Industrial Organizations. Backed by a small but serious committee, his job is to oversee labor's policing of internal racketeering, corruption, and subversion.

Albert J. Hayes, president of the International Assn. of Machinists, is chairman of the AFL-CIO Ethical Practices Committee—set up to ferret out any undesirable elements in the new federation's affiliated unions. In picking Hayes, AFL-CIO leaders turned to a man consistently outspoken against crime and Communism in unions, and to a union whose record would bear the closest scrutiny.

 Reason—The reason for the committee is obvious: Labor's new "bigness" is already under attack. If it does not police its ranks and maintain labor-set standards of responsibility, pressure will mount for policing from the outside.

Because of this, the ultimate success of merged labor may depend upon how well the Ethical Practices Committee does its unenviable job. Its results or failures will be watched closely in government and industry; the committee will help determine the general public acceptance of AFL-CIO's new power. At the same time, the committee's work—and its possible encroachments on jealously guarded "autonomies" of AFL-CIO affiliates—will be followed, not always with friendly eyes, within labor. Controversy, perhaps dangerous to the future solidarity of AFL-CIO, could result from what the committee does or fails to do.

The committee will hold its first meeting during the AFL-CIO executive council meetings in Miami Beach next month. After that, the committee will hire a staff and get down to business. It will move cautiously at first, on charges already being received.

Nobody in the AFL-CIO top leadership doubts that the committee will succeed in its difficult province.

As one federation officer put it, "This one has got to work."

I. Why Is It Needed?

Neither the pre-merger AFL nor CIO had a permanent committee charged with overseeing ethical practices, although both organizations recognized that a problem existed—and each had acted, on occasion, when glaring examples of corruption or subversive influences were noted.

In the late 1940s, CIO used collective actions to expel from the organization a bloc of unions accused of following a Communist line. Similarly, several years ago, AFL ousted the International Longshoremen's Assn. for failing to clear itself of charges of widespread corruption and racketeering. In each instance, international unions were directly involved—not portions of unions.

• Importance—The distinction is important. There is less question of the right of the parent federation to act against a suspect international than of its right to intervene, in any way, in the internal affairs of an affiliated international—involving, say, charges of racketeering against a local union.

During the past several years, federal and state investigations have revealed extensive corruption and racketeering mostly involving welfare and pension funds, but also citing threats, extortion, illegal kickbacks, and so on (page 63).

CIO, since its inception willing to exert more centralized control over international unions than tradition-minded AFL, took steps to safeguard welfare funds—and to forestall public policing. It set up a standing ethical practices committee limited to welfare fund supervision. AFL subsequently authorized ad hoc committees to investigate specific racketeering or other charges.

One of the CIO demands in merger negotiations was for a committee—and enforcement machinery—in AFL-CIO to be an effective curb against corrupt practices. CIO got less than it wanted, but the resulting Ethical Practices Committee with its constitutional backing goes further than anything that has existed before in American labor.

 The Committee—Headed by Hayes, the committee includes David Dubinsky of the International Ladies' Garment Workers' Union and the Amalgamated Clothing Workers' Jacob Potofsky, both key movers in labor's own clean-up drive on welfare funds; George Harrison of the Railway Clerks; and Joseph Curran of the National Maritime Union.

Curran, after being very close to them, fought Communists, as Philip Murray once said, even with "his hard bare knuckles." Dubinsky's determination to keep ILGWU clean throughout influenced the union's appointment of a full-time staff-level "investigator" to probe charges against any locals or leaders. Potofsky and Harrison have worked in their unions—and in labor generally—for labor responsibility and honesty.

The committee's number was limited not due to a lack of possible appointees, but to a decision to avoid buckpassing and general disinterest that is always a problem on large committees.

• The Chairman—The selection of Hayes as chairman was considered a natural in AFL-CIO. His outspoken demands for AFL action against the Amalgamated Meat Cutters & Butcher Workmen for its refusal to bar leftwing fur workers from its ranks increased the high regard for him among AFL leaders fighting corruption and subversion, and within CIO as well. Hayes also took an unyielding position when a substantial part of the leftwing Mine, Mill & Smelter Workers sought admission to IAM in 1955; the Machinists would not offer haven to any suspect group, Hayes made clear.

Hayes' reputation for integrity extends outside labor. From his initiation in 1918 as a machinist learner in charge of a boys' apprenticeship committee on the Milwaukee RR, Hayes has been dealing with management.

From that first teenage union role, Hayes moved up through grievance handler to shop chairman and then international representative. In that role, he talked contracts with such corporations as Nash Kelvinator and Simmons Co. The record bears out an aide's



Someone was having trouble with 500°F,

So we sat down with Du Pont

Du Pont's TEFLON®, as any technical man will affirm, is a remarkable material. But Du Pont engineers needed to improve its resistance to cold flow and deformation at high temperatures (up to 500°F.) for specific uses in their operations.

Du Pont came to Rogers because of our long experience in combining chemicals and fibers, and their own experience which indicated a modified composition as the right approach. We solved their particular problem by "reinforcing" TEFLON with inert fibers. This modified TEFLON (our DUROID 5600) is now in use in eighteen Du Pont plants. DUROID 5600 also promises to lick a critical temperature sealing requirement in supersonic aircraft hydraulic systems.

Our business — and it's the reason why Du Pont and lots of other people come to us — is changing materials to make them better. Undoubtedly you are looking for the changes that improve. We would welcome an opportunity to appraise your material requirements. Write Dept. B for our quick-reading booklet, "Still More Rogers," for more information about us.

*Reg. T.M. of Du Pont Company for its tetrafluoroethylene resin.

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GASKETS . INSULATING MATERIALS . PLASTICS SHOE MATERIALS . FABRICATING

"... the Hayes group will seek to keep the work undercover in order to minimize public reaction . . ."

UNION POLICE PATROL starts on p. 43

comment: "Watch out, he's deceptively mild."

 Record—During Hayes' advance in the Machinists, his union was making its own record against Communism. Although the IAM banned Communists as long ago as 1925, its new aircraft divisions went through a massive invasion of Reds in the 1930s, particularly in the Seattle plant of Boeing Aircraft Co. This was the first IAM aircraft unit, and the Communists, in the 1930s, managed to spot their members in key union posts.

But the Machinist leadership, with the aid of anti-Communist unionists at Boeing, routed them out. The leftwing leaders were placed on trial before the IAM executive council, fined, and expelled. It was the last trouble with leftwing elements in the IAM.

On the other hand, corruption has been noticeably absent in the 800,000 member union. There has been almost no evidence of racketeering, partly because IAM discloses all union affairs and finances to the membership regularly.

II. How It Will Work

Although no tactics have been devised, union officials see the Ethical Practices Committee working this way:

The official system will be investigation, hearing, and action. The committee will deal with officers of the union to be investigated, either to seek authority to look into a particular situation, or to request that the union take action itself. In no case can the committee go directly to a suspect union local; it must deal with the international.

Most of the work will be done in private consultation and by pressure. The Hayes group will seek to keep the work undercover in order to minimize public reaction, just as union leaders in most public statements seek to deemphasize the taints on organized labor.

• First Targets—First target of the committee may be the Laundry Workers (formerly AFL), which is charged with \$900,000 in welfare fund irregu-

larities by a Senate labor subcommittee

headed by Sen. Paul Douglas (D-III.).

The giant Teamsters union is another problem for the committee because of the widespread charges against it. The power and influence of Dave Beck will make the committee tread gingerly, but it recognizes that it will have to act; it can't take steps against a small union and ignore a large one.

Defense Tactics—Getting the individ-

ual unions to handle their own subversive and corruption problems will constitute the hard core of defense against such elements. The successful practices of some unions in the past may be the guideposts for the Ethical Practices Committee program.

Most unions have constitution provisions barring Communists as officers and, in some cases, as members. David J. McDonald's United Steelworkers and several others have gone even beyond that. Members who invoke the Fifth Amendment to refuse to answer questions about Communist ties face investigation by their union and "appropriate action," depending on what investigation of the member reveals.

Corruption, as such, is not touched on in union constitutions. But the rules of the Machinists and many other unions give international officers authority to remove officers of a local found to be undesirable. IAM had its last trouble on this score in 1947, when its executive board took over a local in a San Francisco machine shop and kicked out two corrupt officers.

Agenda—The Ethical Practices Committee might draw up a set of standards to guide affiliated unions in handling Communism and racketeering—such as the AFL-CIO requirements on welfare funds. This might resemble the no-raiding pact—with signatory unions agreeing to its provisions—and be used as a lever that would bring the weight of public pressure behind the Hayes committee.

An easier task will be to keep unwanted elements out of AFL-CIO. Should Dave Beck's Teamsters tighten up their mutual aid pacts with the Mine, Mill & Smelter Workers, now facing federal charges of Communist control, or the longshore union, Beck probably would face a committee's recommended crackdown by the AFL-CIO executive council. Other alliances with tainted unions will be blocked.

The committee probably would give up right now if it felt it could not count on the full support of George Meany. Meany led the ouster of the dock workers' union in his first big move as AFL president, and joined Hayes in insisting that the Butchers clean up Communism in the fur union. Even before that, in 1952 when he was secretary-Treasurer, Meany was a member of the first AFL ad hoc committee to act against corrupt practices in the name of the federation; the Meany committee barred the Jewelry Workers and AFL's Auto Workers from issuing charters to corrupt unionists.

"we thought we had a HOT POTATO"

"It was a flow control problem like many plants have had.

"Ours involved handling fatty acids, soap oils, solvents, etc. They were leaking through the valves, past the metering stations and into the processing vats. They were throwing our batches off balance and spoiling our finished product—soaps and cleaning fluids. We changed makes of valves three times. None of them lasted over eight weeks. Valve replacement costs were being added to production losses.

"We thought we had a hot potato on our hands.

"Then we changed valves once more. This time we chose Crane No. 1670 Ni-Resist Cast Iron Valves. It worked. Today—two years later—these Crane valves are still holding tight. We've had no piping maintenance, no shutdowns, no leaks. Not one Crane valve shows any deteriorating effects from the fluids handled. We should have foolproof service for a long time to come."

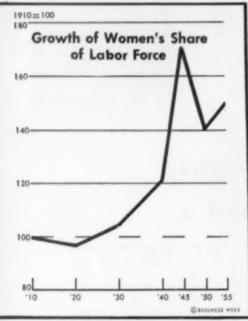
shutdowns, no leaks. Not one Crane valve shows any deteriorating effects from the fluids handled. We should have foolproof service for a long time to come."

* * *

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for more than a century. When you choose Crane valves and fittings you are assured of the broadest selection, with proved design and quality manufacturing to give you more service and satisfaction at lower cost.

CRANE VALVES & FITTINGS



50-Year Goal Near For Women Workers

Through half a century, the women's share of the U. S. labor force has grown mightily to reach a 33% level in 1956. Meanwhile, the women's battle for equality in industry has never stopped. For 35 years one of the biggest forces behind that battle has been the Women's Bureau of the Labor Dept. Now the bureau, and other advocates of women's rights, have in sight goal of equal pay for equal work as Congress considers legislation.

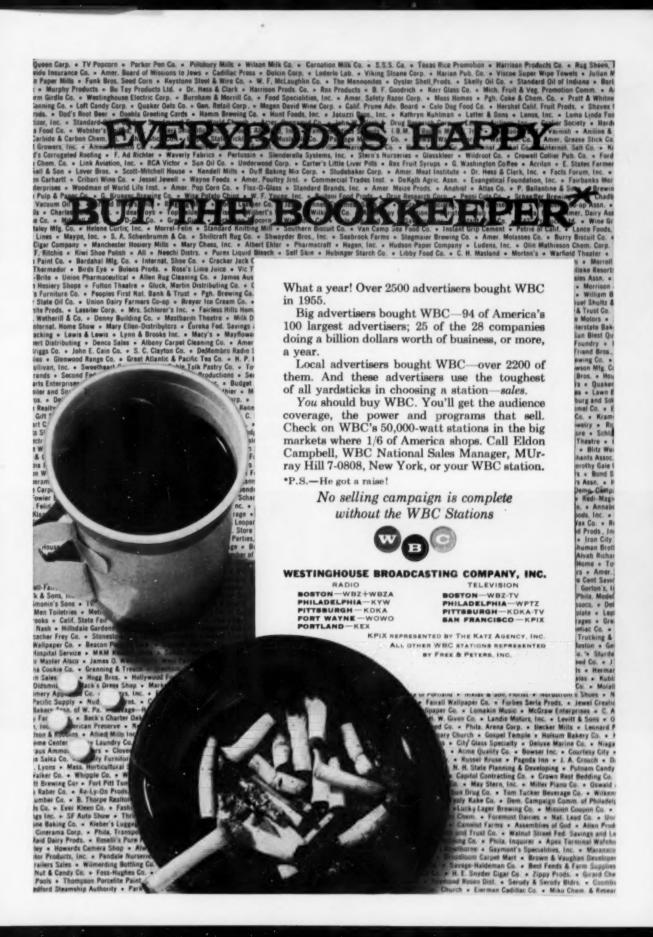
Fifty years of feminist struggle are heading toward a new pay-off these days, as the nation's women workers start dunning Congress to pass a federal equal-pay-for-women bill. Their drive for this equality is heating up now, after getting a big boost from a passage in Pres. Eisenhower's State of the Union message. Eisenhower, first president to press the equal pay principle in the annual outline to Congress, told the legislators that equal pay for equal work, regardless of sex, is "a matter of simple justice" (BW-Jan.14'56,p82).

But Eisenhower's boost, and even the agitation of the mass of women workers, are only part of the forces behind this new facet of the continuing drive to raise the status of women in industry. One of the biggest forces behind the effort is gathered in one of Washington's smallest bureaus. This is the Women's Bureau of the Labor Dept. founded in 1920, it has a staff of 56—and only one of them, the office boy, is male.

In the pictures on this and the following pages you can see a measure of the success achieved by the bureau and by other advocates of women's rights. The working woman's lot has improved vastly since she first began entering the nation's work force in large numbers, back around the turn of the century.

Slow Gains—Physical working conditions are better. Pay, too, has multiplied—though probably at a slower rate than men's pay. But that's because women have traditionally filled lowpaying jobs. In the 1900s, it was not uncommon for a woman to work 72 hours or more a week. Today, all but





Pioneer and master of the exposed ceiling concept...

Frank Lloyd Wright



FOR FIFTY YEARS the name Frank Lloyd Wright has signified freedom of architecture. "There should be as many types of houses as there are types of people, and as many differentiations of the types as there are different people," he says."

Through his long and distinguished career, Mr. Wright has ever been a champion of new forms and new materials. Of Tectum, he says, "I have personally examined Tectum and find that it is a material of exceptional merit. Selection of Tectum could very well be applied to my theory of Organic Architecture—natural to the time and place for which it is designed and natural to the man for whom it is built."

Versatile wood-fiber Tectum provides a perfect material for a functional roof, advocated by Mr. Wright for so many years. A single thickness of Tectum serves as a roof deck . . . insulation . . . acoustical treatment—and is decorative as well.

Write now for complete information—or phone your nearby Tectum distributor. Tectum Division, Peoples Research and Manufacturing Company, 800 South Sixth Street, Newark, Ohio.

From Fronk Lloyd Wright. An American Architectus
 Edited by Edgar Kaufmann. Published by Borison



With the functional roof, Mr. Wright says, "You have a wide-spreading overhead that is really a release of interior space to the outside: a freedom where before imprisonment existed."*



Advanced thinking of Mr. Wright is very well illustrated by the living room ceiling of the Coonley House, Riverside, Illinois, built in 1908. It is a forerunner of today's exposed ceiling concept.

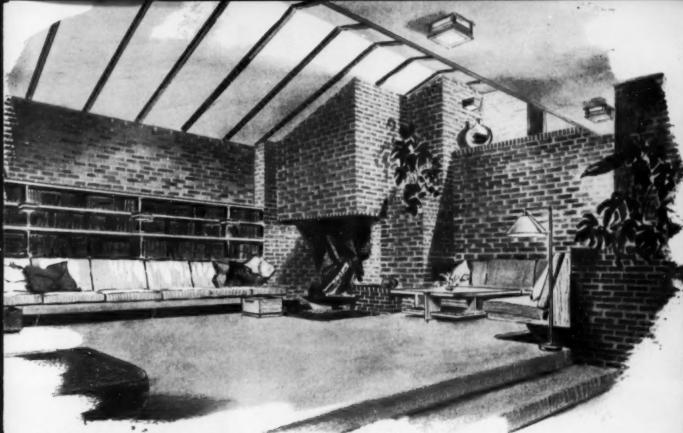


why lay a roof deck...



cover it with insulation...

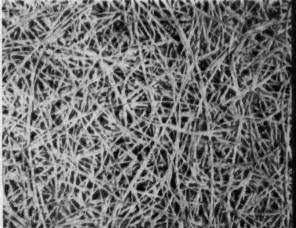




The studie-type ceiling, with exposed structural members as is shown above, is extremely popular in contemporary architecture today. Had Tectum been on the market at the time Mr. Wright designed this room, it would have provided the perfect deck and ceiling material.



Tectum goes down so quickly and easily. Here, in a single product, all "overhead" requirements are met. Think of this in terms of tremendous savings of time, labor, money!



and add acoustical material...

when you get all 3 with the



For Plants . Commercial Buildings . Institutions . Homes



Spoils vary in women's fight for better status in industry. Each year has brought shorter hours, more pay. But in some industries, like garment trade, old working methods are little changed.

WOMEN WORKERS starts on p. 46

six states have laws limiting working hours for women. Of these, most limit work to eight hours a day.

About one of every three workers in the U.S. is a woman-20.5-million of the 63-million total work force. Among machine operators in garment factories, electrical supply plants, and in the shoemaking, textile fabric, and textile spinning industries women are in the majority. More women-almost 4.5-million -work in clerical jobs than in any other occupation. Innovations in automatic and electronic office equipment may make some inroads into employment in offices, but experts believe that similar changes in heavy manufacturing will enable women to find more jobs in factories. By 1960, even if the level of business activity remains stable, women probably will make up about 35% of the total work force.

Bureau's Field—So the special problems that are raised wherever women work will grow. These trouble spots are the special province of the Women's Bureau. Mrs. Alice K. Leopold, Women's Bureau director, is the first holder of this job to be elevated to the rank of assistant to the Labor Secretary. She received this title on Sept. 30, 1954. With her new rank and status, Mrs. Leopold is campaigning vigorously

to carry out the mandate of the bureau
-to "formulate standards and policies
which shall promote the welfare of
wage-earning women, improve their
working conditions, increase their efficiency, and advance their opportunities
for profitable employment."

The Women's Bureau interprets this directive broadly. That's why it probes into social issues—women's right to hold public office, to serve on juries—in addition to questions of working conditions.

The bureau has no law to administer or enforce, but it does plug for legislation and action to improve the status of women at the local, state, and federal levels. It does this by organizing conferences, publishing pamphlets, and making continuous studies.

Special Problem—Right now, Mrs. Leopold is faced with a very specific problem. She is searching desperately for a lady locomotive engineer. She said in a recent speech, that women hold down some 446 jobs, including locomotive eugineering. Promptly aroused, the Brotherhood of Locomotive Engineers challenged Mrs. Leopold to produce the well-manicured, feminine hand resting on a locomotive throttle. To date, somewhat shamefacedly, Mrs Leopold is still looking.



TODAY in the garment industry, wages, hours are better than ever before, but some methods are as they were in . . .

1930 when it was still a common thing for 15-year-old girls (left) to work long shifts in crammed factories.







TODAY in Louisville factory, woman worker feeds cigarette packing machine, shows none of agonized expression seen in . . .

1883 in Richmond, Va., cigarette factory (left) where a 72-hour week was not uncommon for the women workers.





TODAY in Dun & Bradstreet's New York office, long hours end as automation speeds bookkeeping, but back in . . .

1877 the job called for women with stamina to stand all day; however, office "wolf" (left) operated just the same.



A GOOD REASON FOR SPECIFYING "Buffalo" VENTILATING FANS!

A hospital, of all buildings, needs quiet mechanical equipment. That's why, in the brilliant planning of this new Long Island Jewish Hospital, ventilating fans were chosen which would not only deliver to complete satisfaction, but do it at an extremely low noise level. Thus, "Buffalo" Fans were specified as part of the hospital's unique ventilating and air conditioning system.

In summer, cold well water is circulated thru radiant panel piping and thru "Buffalo" "PC" Air Conditioning Cabinets in the ventilation system. In winter, fans supply warm air which, in conjunction with the radiant panel heating system, provides adequate comfort throughout the hospital.

For your air requirements, choose the fans that so many hospitals, institutions, commercial and industrial firms choose for quiet opera-

tion — efficiency — dependability — in short, for "Q" Factor* performance.

Below, one of the super-quiet "Buffalo" Limit-Load's Fans keeping operating rooms of the hospital dependably ventilated. Write for Bulletin F-101 for details on this proved line of fans.





Above, a group of "Buffalo" Belted Vent Sets are used for exhausting and Limit-Louis Fans supply clean, tempered air to hospital service areas.

*The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.



BUFFALO FORGE COMPANY

458 BROADWAY

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
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VENTILATING AIR

AIR CLEANING

AIR TEMPERING

INDUCED DRAFT EXHAUSTING

Pension Plan . . .

. . . for Teamsters takes root on West Coast. Still in the regional stage, it could spread across the nation.

What could be a pattern for a nationwide pension plan covering members of the Brotherhood of Teamsters has gone to arbitration in Los Angeles. The move followed a costly 90-day strike that tied up 90% of all construction in Southern California.

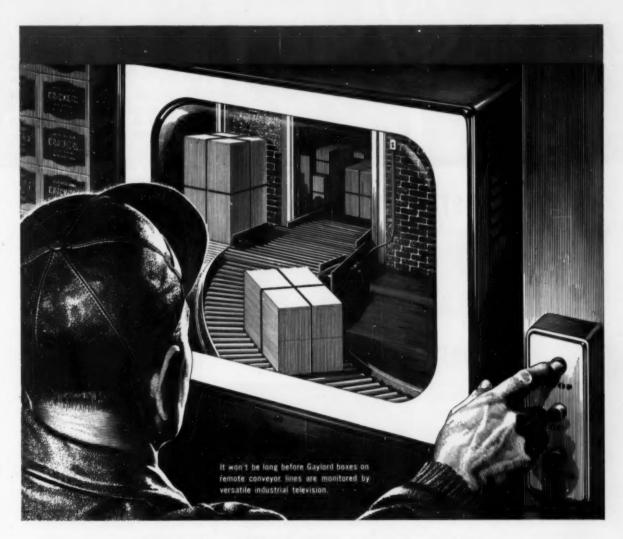
The Teamsters unveiled a controversial areawide pension program last May, to be administered from Seattle. The plan would "in time" be extended throughout 11 Western states to cover all members of the union, regardless of the industry in which they work, the announcement said.

Sponsored by the powerful Western Conference of Teamsters, from which Dave Beck emerged to the Teamsters presidency, the area-wide plan was accepted in six months by employers of 90,000 unionists. Most were in the trucking industry, but others were in brewing, food, aircraft, rock products, and other fields.

• Equal or Better—In late summer, the Teamsters included the areawide pension plan in demands placed before 29 Southern California rock, gravel, and ready-mixed concrete companies. The employers of 1,600 truck drivers and helpers refused to become a part of any area plan. They offered their own plan to be administered locally, defended it as "equal to or better than" the Teamsters' plan. When bargaining deadlocked, the drivers struck.

• Discord—The proposed areawide plan would be administered by an equal number of employer and union trustees. But, according to the Southern California companies, the scope of the plan and the location of its administrative offices in Seattle would mean that day-by-day control would be vested largely in union trustees. They also complained that trustees could change the plan, under its terms, "retroactively or otherwise from time to time."

The Teamsters retorted that "interested" employers would have just as much voice in administering the areawide program as in a local one. Moreover, the union argued—significantly for Teamsters employers all over the country—the mobility of Teamsters members makes necessary at least regional pension programs. Less than 5% of union drivers stay with one employer for longer than five years, the union contends, and so do not build up pension credits under the



WELL-BEHAVED BOXES...



... are vital to modern, mechanized handling methods. As operations become more automatic, interruptions are more costly. Precision-built Gaylord containers are dimensionally accurate and structurally strong to speed packing and handling... prevent jam-ups.

Gaylord container specialists will be glad to work with you in selecting or developing "well-behaved boxes"... for maximum manpower-saving efficiency. Call your nearby Gaylord office.

CORRUGATED AND SOLID FIBRE BOXES . FOLDING CARTONS . KRAFT PAPER AND SPECIALTIES . KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION * ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION

ELECTRONICS COMPANIES



GENERAL ELECTRIC



WESTERN ELECTRIC

SPARK INDUSTRIAL DEVELOPMENT



INTERNATIONAL RESISTANCE

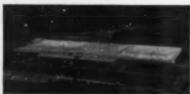


NATL CARBON DIV. UNION CARBIDE & CARBON

IN NORTH CAROLINA



GREAT LAKES CARBON



WESTINGHOUSE ELECTRIC

The continuing growth of the electronics and electrical products industry in North Carolina includes multiple locations for some of America's best known names—General Electric has four, Western Electric three, National Carbon three, International Resistance two. Westinghouse Electric and Great Lakes Carbon have large plants and other leading companies have one or more in this State.

There are excellent reasons why this and kindred industries particularly many phases of metalworking—are selecting North Carolina.

Information about desirable sites is available
DEPARTMENT OF
CONSERVATION & DEVELOPMENT
Raleigh 4, North Carolina
Governor Luther H. Hodgea
Chairman of the Board

Native born, intelligent labor inabundant numbers is a proven asset here; workers are producing precision equipment and other complex products after surprisingly short training periods.

Plenty of POWER at reasonable rates... a stabilized TAX structure and a balanced budget... good TRANSPORTATION service and overnight accessibility to major markets... friendly communities and a sound, business-like State government—these are some of the reasons why forward-looking companies are locating and expanding in North Carolina.



usual form of industrial pension plan.
 Big Tent—The Western Conference of Teamsters plan would cover all members of the union for as long as they work for any employer participating in the areawide pension program.

Each employer would put 10¢ an hour for each driver into the area fund. A driver moving from job to job would take his credits along with him. At 65 and after 15 years of employment by any number of participating employers, a driver could retire on a monthly pension of up to \$75. Benefits would be paid under a group annuity contract issued by the Prudential Insurance Co. of America.

So far, the Teamsters' spokesmen talk of the Western pension situation as only a test operation for regional plans, likely to be sought elsewhere. But on the West Coast it is considered significant that Prudential got the group annuity contract; it has national coverage and won out, reportedly, over a number of other large companies with lower bids but limited coverage.

How Federal Minimum Affects Wage Structure

A wage increase ranging from 25¢ to 40¢ an hour over the next two years was negotiated last week for 5,000 clothing workers by 50 Illinois manufacturers and the International Ladies' Garment Workers' Union.

It is significant for two reasons:

 The substantial boost is likely to influence other bargaining in the industry and to be reflected in higher prices for women's pajamas, house dresses, skirts, blouses, and other apparel.

 The clear indication it gives of the way the coming increase in the federal minimum hourly wage will also affect workers who already receive more than the new legal minimum—effective Mar. 1—of \$1 an hour.

· Beating the Clock-Shortly after the new \$1 minimum was voted last year, ILGWU in Illinois checked its contracts and found a substantial number of its members in the state were getting only 85¢ an hour-and so would be due raises when the new federal minimum goes into effect. ILGWU didn't wait for that. It took the wage situation up in bargaining, and last week settled for an increase from 85¢ to an above-statute \$1.05 minimum effective Mar. 1 and \$1.10 on the same date in 1957. But ILGWU accomplished more than just topping the minimum for low-paid workers. By agreement, employers will also increase all other job rates on Mar. 1 to maintain former wage differentials "as nearly as possible." In 1957, the above-minimum workers will get another 5% increase. END

A Report from the

STEEL CENTER of Mid-America



GRANITE CITY STEEL CO.—WITH TWO ROUNDS OF EXPANSION COMPLETE—NOW PLANS A THIRD WHICH WILL INCREASE PRODUCTION FOR MID-AMERICA ANOTHER 30 PERCENT



John Marshall, President, tells how and why his company is investing in the future of the Midwest and Southwest.

"Less than two years ago Granite City Steel completed an \$89 million expansion program.

"Our ingot output has doubled since 1947.

"Now we are starting another major expansion to raise ingot production 30% by early 1958.

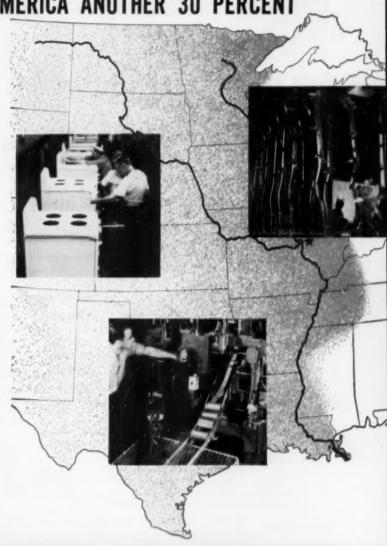
"The first benefits of this new expansion program will come late this year with increased output of hot rolled coils and sheets. Greater production of cold rolled steel will follow later.

"We are, in effect, rounding out our production facilities, to bring open hearth capacity in line with our rolling mill capacity.

"As the major basic producer of sheet steel located on the Mississippi, we believe it is our responsibility to keep pace with the healthy industrial growth of Mid-America—and to build ahead for the future.

"For our economy *grows* on steel. Its production is one of the measures economists use to determine how we, as a nation, are doing, and where we are likely to go.

"In location, in transportation, in service, we are Mid-America's steel center — and the future of Mid-America looks good to us."



GRANITE CITY STEEL

And subsidiary: Granco Steel Products Co.



... FREE!"An antiquated electrical distribution system was costing a midwest refractory plant a lot of money. Power losses were alarmingly heavy. The problem was aggravated by the immediate need for increased plant output. Three shifts were needed instead of two.

A Square D Field Engineer was called in. He reviewed the setup with the Chief Engineer and made a specific proposal involving switchboards, panelboards and power duct. Most of the equipment was "standard" - quickly available from local distributor stock. Other items were expedited through one of Square D's strategically located assembly and warehouse plants.

Due to the vastly increased efficiency of this new distribution system, the power cost for three-shift operation was no greater than for two under the old regime!

At your service—in 3 important ways

Field Engineering Counsel is available through Square D branch offices in all principal United States cities-and in Canada, Mexico and England. Backing up this counsel are the design and manufacturing facilities of 13 strategically located Square D factories and the localized services of a nation-wide network of authorized electrical distributors.





SQUARE D COMPANY

Auto-Labor Truce

Signing of three-year contracts may usher in an era of peace for the Big Three and the independents.

Major bargaining in the auto industry was closed for three years last week when South Bend (Ind.) employees of Studebaker-Packard Corp. accepted-by a narrow vote-terms of a new contract. Now, auto production contracts are sealed until mid-1958; because of a series of automatic wage increases and cost-of-living adjustments, they are closed even to wage reopenings.

For auto's Big Three, the three-year contracts with the United Auto Workers signed in mid-1955 opened the way to a period of settled labor relations. Auto independents, who bargained longer and harder, also hope for labor peace. But whether the independents-Studebaker-Packard Corp. and American Motors Corp.-actually will enjoy more stabilized union relations hinges upon two factors:

· How successful they are in bidding for a larger share of a competitive

and tighter auto market.

· How well their new labor contracts work once managements get down to a difficult-and controversialjob of making work standards more competitive under the relaxed provisions of new contracts.

· Concessions-During World War II and for a few years afterward, independent auto companies bidding for a bigger share of the car market gave their UAW workers substantial concessions. The move was designed to step up production on a virtual cars-at-anyprice basis. Once the market began to tighten, the independents were caught in a cost-price squeeze. They demanded that UAW grant contract revisions that would bring the higher production costs of the independents down to Big Three

American Motors was the first to come out of stubborn negotiations with what it happily described as a "competitive" contract. Then the Packard Div. of Studebaker-Packard won concessions from UAW. Finally, after 11 months of bargaining, UAW's Local 5 at South Bend agreed to give Studebaker the right to make some important cost-cutting changes in work standards.

· Studebaker Victory-Ratification of the pact (by a 2,456-to-2,139 vote) cleared one big hurdle for Studebaker; one faction in the South Bend local strongly opposed ratification and, for a time, the workers' acceptance of the contract was in doubt. International



Union Carride has long been closely identified with silicones through the work of its Division, Linde Air Products Company. To an important degree, industry has come to "Look to LINDE for Silicones."

Silicones are incredibly versatile manmade chemicals offering startling advantages in more and more products and processes. You may find that their stability under wide temperature change is the quality that interests you. Or it may be their water repellency, their high electrical resistance, or some other special property.

Interesting new developments, as well as the many proven needs, have now led to the formation by Union Carbide of a Silicones Division. With the world's most modern silicones plant almost ready to go on stream at Long Reach, W. Va., this new Division will be responsible for Union Carbide's program for the development, manufacture, and sale of silicone products.

This is more than just a change of name. While addresses and telephone numbers will remain the same, customers will be served by still further expanded sales and technical staffs.

But of prime importance, it means that through the expanded organization and vastly increased output, Union Carbide will provide more silicone products, in a greater variety, to match the needs of the fast-growing number of its silicone users. If you haven't already checked on the potentialities of silicones in your business, you should. Now, more than ever, it will pay you to . . .



Look to UNION CARBIDE for silicones

- Principal Divisions and Subsidiaries include

Silicones Division • Pyrofax Gas Corporation • Carbide and Carbon Chemicals Company • Bakelite Company • Haynes Stellite Company
National Carbon Company • Linde Air Products Company • Union Carbide Nuclear Company • Electro Metallurgical Company

Our Fourth Dimension...

The other day a fact-finder dropped into our office to get some information for a client planning to locate an industry in Massachusetts. Talk got around to availability of highly trained professional people — engineers and the like. Our pool of top-level workers is one of the finest in the country, but reluctantly we had to admit that you don't find too many such folks at liberty.

At that point, our visitor made the interesting observation that his client did not consider this to be a major location problem. He went on to explain that in their experience, engineers, technicians and other high-salaried workers in industry throughout the country are eager to come to New England because it is so fine a region in which to live and work and raise a family.

This *livability* is Massachusetts' fourth dimension in the field of economic development. And there is truly gracious living in this old Commonwealth of ours, rich in its incomparable heritage of American history and culture—its superior educational facilities, its delightful variety as a vacationland, its warm homeliness.

We commend this important element of *livability* in Massachusetts to industrialists with plant location problems.

Richard Preston, Commissioner

Massachusetts Department of Commerce
334 Boylston Street, Boston 16
(COpley 7-5600)

UAW supported the agreement, and it won approval.

The Studebaker agreement, like those of other independents, provides the basic "package" negotiated by major producers. This includes a supplementary unemployment benefits plan for laid-off workers. The total economic gain is estimated by Local 5 officers at 21¢ an hour—about what General Motors and Ford settled for.

Revisions—There was little hard bargaining on the economic terms. The tough negotiations were over non-economic sections of the contract. In the final agreement, many of these were changed—in fact, revolutionized.

Among other revisions:

· Studebaker's unique plantwide "bumping" system was eliminated. Under it, an employee with high seniority in most unskilled classifications could claim the job of any less-senior employee-regardless of skill qualifications. There was no limit on the number of times a worker could "bump" others or apply for transfers. The new agreement establishes seniority by classification, job, and shift. Transfers are limited to two a year. The contract permits Studebaker to fill openings in 125 high-skill classifications by recalling experience! former employees; it provides that the best qualified senior employee is to get other jobs, and it carefully defines what "qualified" is to be interpreted to mean.

 A clause that permitted employees to disqualify themselves after being trained, and imposed no obligation to return to jobs for which they were qualified, was eliminated.

• Production standards were, in the company's words, "completely reconstituted." For the first time, Studebaker won union recognition of its right to demand a "fair day's work for a fair day's pay."

• Studebaker was given the right to "establish and enforce and adjust production standards," subject only to formal grievances presented in writing and signed by the employees.

 Personal rest, relief and clean-up time was reduced from 43 to 24 min. a

day.

 Management was given the right to determine location of plants.

• The ratio of union representatives to employees in the plant was reduced from 1-to-75 to 1-to-50. Stewards were limited to three hours a day to process grievances, and were curbed in their movements through the plant.

Methods for halting work stop-

pages were tightened.

A company official said all of the changes were made "along the lines of the contracts now in force in the plants of the Big Three auto producers."

 More Competitive—American Motors, formed through the merger of Nash-Kelvinator and Hudson, also won



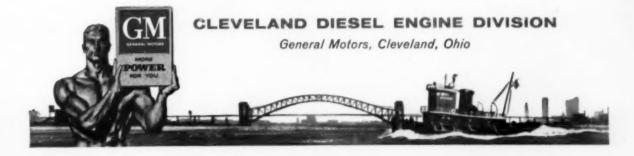
NOW THE LADY HAS MORE PULL

when this harbor lady takes a tow, a new, spectacular, more efficient set of muscles go to work. For she's powered by a General Motors *Turbocharged* 2-cycle Diesel—greatest GM Diesel development in 17 years.

Turbocharging simply means that GM engineers have put exhaust gases to work. These gases drive a turbine which forces more air into the Diesel's cylinders for greatly increased engine efficiency.

Result? An engine that delivers 75% more power with comparatively little increase in engine size and 30% reduction in weight per horsepower. Turbocharging materially reduces specific fuel and lubricating oil consumption.

With a General Motors Turbocharged Diesel, tugs will handle bigger tows—work faster and cost less to operate.



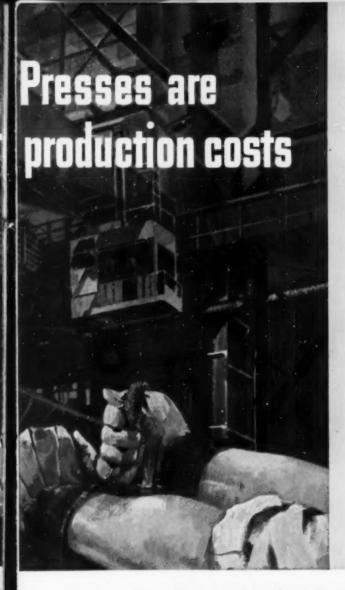
Bold planning and new Danly meeting Industry's needs for lower



MEETING THE CHALLENGE with modern methods and machines — stamping electrical parts faster, at lower cost!

MODERN PRESSES ARE PAYING OFF FOR

THE ELECTRICAL EQUIPMENT INDUSTRY
Off the car and on the job...typical of the faster, easier press installation Danly is so famous for ... a result of pre-assembly and pre-testing before delivery.



An important part of today's capital goods expenditure in the electrical equipment industry is ear-marked for Danly Presses

The progress story of today's electrical equipment industry is being told in terms of more efficient, lower cost production. It is being written by leaders in the industry who are turning to newer, more efficient machines to achieve the greatest possible production economies. Modern presses are foremost in their consideration. And more than ever before, they call on Danly to do the job.

Lasting precision performance by Danly, resulting in more stampings per shift, is one of the big reasons why Danly Presses are the big choice in practically every industry. It starts with Danly's extremely accurate yet extra-rugged construction. But Danly goes further, preassembles and work-tests every Danly Press at its own plant to eliminate major installation delays. Danly also makes the electrical and pneumatic control system an integral part of the press . . . a method that actually saves weeks of installation time. And Danly employs automatic oil lubrication, reduces press maintenance by hundreds of hours . . . assures positive press protection with a fool-proof lubrication safety system. The results are many: unmatched performance records, months of continuous peak-load operation with no maintenance, less costly down time, fewer rejects. Dollar-wise advantages are unprecedented . . . increased production at much lower cost, increased die life.

You, too, can have these same cost saving advantages that Danly Presses give to so many others. Like them, you'll want complete facts and figures. You can get them by talking with a Danly engineer. Why not phone him soon?

DANLY MACHINE SPECIALTIES, INC.

2100 South Laramie Avenue, Chicago 50, Illinois

Danly's broad line offers all industry the right press to meet every modern mass production need



DANLY UNDERDRIVE PRESSES

Single, double and triple action in a wide range of press tonnages.

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Industry's No. 1 choice for uninterrupted production, longer die life.

DANLY STRAIGHT SIDE PRESSES

Single and double action, from 50 to 3000 tons...right for every tough job.

It costs less to run a Danly Press



MECHANICAL PRESSES

DIE SETS + DIEMAKERS' SUPPLIES



Here's a popular chair that really gets around . . . you see it in smart restaurants, hotels, cafeterias, reception lobbies, meeting halls and ballrooms in every state in the Union.

While the Goodform chair is a master in pure comfort, its graceful lines and rich upholstery put it in a class by itself. Under its satin-smooth aluminum finish is a strength of construction that belies its amazing light weight and assures you many extra years of service.

Any Goodform aluminum chair can be had in a choice of smart color finishes . . . Ebony, Bronze-Gold, Copper or natural aluminum. These colors are not just painted on but are anodized deep into the aluminum . . . cannot wear off . . . cannot chip off.

Back and seat can be cushioned with luxurious air-cooled foam rubber. You may choose long-lasting, bright plastic or cloth fabric upholstery materials in attractive colors, patterns and textures to blend with surroundings.

You have a satisfying economical investment in the almost negligible maintenance cost and unusual long life of all Goodform chairs. They are on display at all GF showrooms. Consult your local classified directory for the address. Look them over there . . . or write us for full-color catalog. The General Fireproofing Company, Dept. B-56, Youngstown 1, Ohio.

© GF Co. 1956-



MODE-MAKER DESKS • GOODFORM ALUMINUM CHAIRS • SUPER-FILER MECHANIZED FILING EQUIPMENT • GF ADJUSTABLE STEEL SHELVING

GF metal business furniture is a good investment

concessions aimed at making it competitive with the Big Three.

AMC's agreement with the UAW provides that production standards, once established, may be changed only when: (1) changes in design, methods, or materials so require; or (2) other circumstances indicate they have become improper or in error.

Edward L. Cushman, American Motors' vice-president for industrial relations, claims the second part of that provision is unique in the industry.

Cushman says "hundreds" of such standards have been changed over the past year and a half.

Also, as at Studebaker, American Motors was given the right to expect a "fair day's work for a fair day's pay."

LABOR BRIEFS

Opposition to integration of state unemployment benefits and private supplementary unemployment benefits is being mobilized in Michigan. An "information committee" has launched a statewide campaign to "fully inform Michigan citizens on this vital issue." It warns that SUP integration threatens "the free enterprise principle of encouraging industrial incentive."

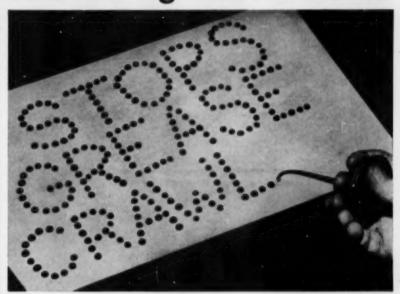
A "right to work" law will be sought this year by initiative referendum in the state of Washington. Job Research, Inc., an organization opposed to compulsory unionism, claims to have collected \$50,000 to mail initiative petition blanks to every home in the state.

Convictions were obtained last year against 53 labor officials through a federal campaign against labor racketeering, the Justice Dept. announces. Of the 53 convictions, 39 were obtained under the Hobbs Anti-Racketeering Act. The other 14 were under a section of the Taft-Hartley Act.

Labor peace through 1956 is in prospect for the Pacific Northwest's lumber industry. An agreement last week between employers and the International Woodworkers Union, covering 30,000 fir workers, wrapped up bargaining in the industry until 1957. The agreement gave a 4½% pay hike.

AFL-CIO has lost in its first big bid to take over bargaining rights from independents in the oil industry. Employees at Standard Oil of Indiana's plant at Whiting last week rejected the Oil, Chemical & Atomic Workers by 4,501 to 1,095, voted to continue to be represented by the Independent Petroleum Workers of America.

Astonishing new PATAPAR°



...gives positive control of grease and oil penetration

This unretouched photograph tells the story of the "nonpenetration" qualities of new types of grease-proof Patapar Vegetable Parchment. Drops of oil placed on Patapar remain on the surface INDEFINITELY. The oil does not spread or "crawl." It does not seep through.

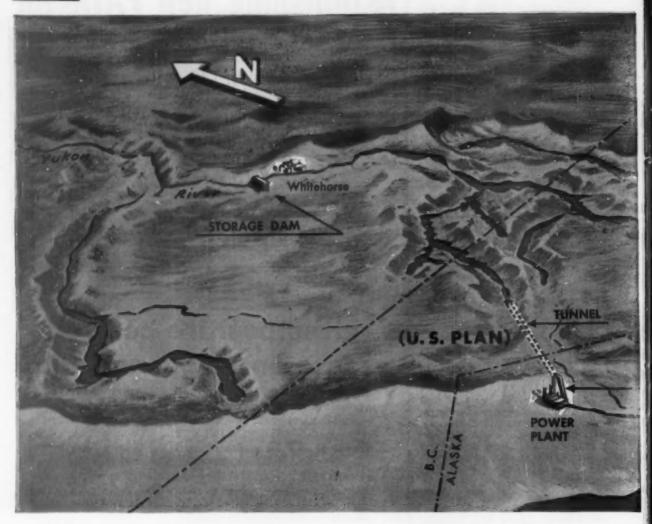
These special Patapars offer a revolutionary way to package products having internal or surface content of grease, fats, oils. Their effectiveness has been proven with bacon, lard, shortening, margarine, ham, oiled machine parts and many other products.

Patapar gives you WET-STRENGTH, too

The new grease-proof Patapars have the same high wetstrength that is inherent in all the many different types of Patapar Vegetable Parchment. This wet strength is sure and permanent.

In your business — Perhaps the unique qualities of Patapar will be an economical solution to a problem in your business. Tell us the problem. We'll send information and samples of the type of Patapar we recommend. Why not write today?





The Yukon River: Which Nation

On America's list of untapped resources-a list that is fast diminishingone of the greatest remaining assets is the Yukon River of Alaska. The world's fifth largest stream, its power potential is incalculable (BW-Mar.14 53, p41).

Last week, in Washington, the Yukon was once more a subject of discussion. Two things made it so:

· A House Interior subcommittee, which had spent six weeks in Alaska last fall, was breathing new life into a varied set of first-stage proposals pointed toward exploiting the Yukon's natural wealth. There were strong indications that federal funds would be forthcoming to get at least a few of these proposals off the drawing boards.

· A continuing state of tension between the U.S. and Canada had the fate of two grand projects for the Yukon (map) very much in doubt. The rift between Ottawa and Washington over these two proposals could become one of the most serious disagreements

the two have ever had.

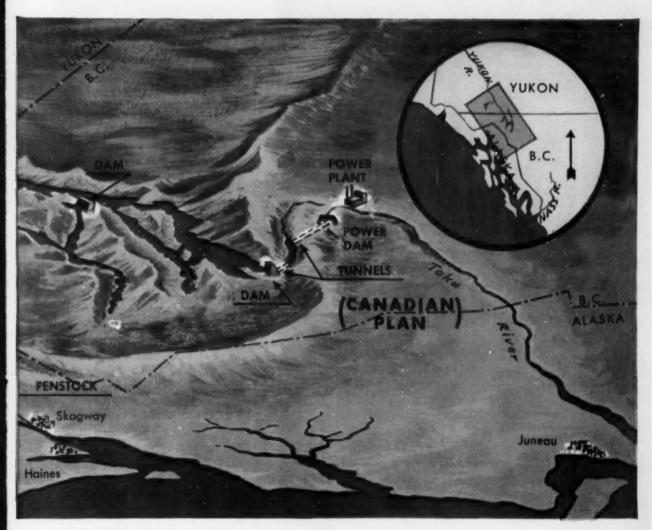
· Potential-If developed only partially, the Yukon's waters could support a huge metallurgical industry, rivaling our own Pacific Northwest. Those who have fallen in love with this lifeline of America's last frontier feel that its development would attract the thousands of new residents essential to the statehood Alaskans so deeply desire.

In the last few years, the territory has made great strides in this respect. Between 1880 and 1940, population increased only a little over 100%-from 33,000 to 72,000. But following World War II, almost 100,000 new residents

flocked to Alaska, increasing its population to 168,000 by 1955.

The area's promoters see an even more revolutionary growth if Alaska's power potential is exploited. They are confident that the coupling of process power with Alaska's seemingly inexhaustible supplies of minerals and timber, would make the territory's mining and lumbering operations economically important throughout the world: Mineral production since 1880 has already totaled about \$1-billion, and sawmill cuttings had grown from 6.5-million bd. ft. in 1899 to 60-million bd. ft. by 1945.

· Roadblock-The Yukon, the great undeveloped hope for the territory's future, is fed by a multitude of lakes and streams lying across the rugged border mountain chain in British Co-



Will Harness Its Power?

lumbia. Throughout its path, the Yukon is studded with promising power sites. The big American plan (map) has been to divert its headwaters in Canada southwestward through the mountains to an Alaskan powerplant. But this has run head-on into an apparently immovable obstacle-Canada, which refuses to cooperate.

· Proposal-Several years ago, Aluminum Co. of America announced its intention of building a large hydroelectric plant on the American side of the border and setting up an aluminum reduction plant as its chief customer. Alcoa's idea was to tap the Yukon headwaters across the mountains to feed the powerplant falling water.

This plan, which grew out of a U.S. Bureau of Reclamation study made in 1951, would involve a system of dams

on the Canadian side to bottle up the Yukon's flow, and a tunnel-penstock 15 miles long cutting through the border mountains. On the Alaskan Panhandle coast near Skagway, a power-plant of more than 2-million kw. would be built. Power could be produced at only a little over 2 mills per kwh.

The former Alaska district director of the Reclamation Bureau had estimated the Yukon project's output at less than 1-million kw. This year, his successor, acting on more recent hydrological data, but the same old plans, came forth with the figure of 2-million kw.-enough to power a city the size of Pittsburgh, and more than enough to run a project bigger than Canada's famous Kitimat aluminum reduction center.

• Thumbs Down-Canadian reaction to Alcoa's plan was prompt-and decidedly cool. Ottawa refused to permit such a diversion of water in British Columbia, and instead licensed Frobisher, Ltd., one of the companies in the giant Ventures, Ltd., holding complex, to undertake an all-Canadian project. (President of Ventures is Robert B. Anderson, former U.S. Deputy Secretary of Defense.) Frobisher, in conjunction with Quebec Metallurgical Industries, set up Northwest Power Industries to study a Canadian site on the Taku River.

• Canadian Attitude-To understand the attitude of Canadians in this squabble, you have to realize the importance of a river such as the Yukon to the economic life of the country. Without large navigable streams, thousands of square miles of mountainous country are impassable. Development of farm areas in the lava-rich valleys nestling among the mountain chains depends on the steady flow of the clear glacial water. Fishing, transportation of the



revolving door entrances that are "always open" to safely speed two-way traffic . . . yet "always closed" to outside drafts, dust, and disagreeable weather . . . really say "come in" and "come back again" in the most convincing way. And, at the same time, they really save your clients many dollars each year in each of many ways — all verified in the new International Revolving Door Entrance Manual. Write for your personal copy, now.



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timber that abounds there, freighting in of the staples of life from other areas—all depend for their continued existence on the rivers and lakes.

To divert the chief source of this supply into another jurisdiction seems to many Canadians to be carrying friendly relations a little too far.

A few years back, however, the government of British Columbia almost did that. At odds with the Liberal National government at Ottawa, the Social Credit government of British Columbia came very close to making a deal with Kaiser Aluminum to build a storage dam in British Columbia to regulate the flow of the Columbia River into the powerplant area of Washington State. Ottawa plugged this loophole in the law by voting to require a license for diversion of Canadian waters across the border.

The new law killed the Kaiser proposal, made it impossible later for Alcoa to go ahead with its plans.

 Cold War-When Frobisher began to study the possibility of a Canadian development, it approached Alcoa. The company showed little interest because, among other reasons, of the U.S. tariff on aluminum imports.

Frobisher did entice Reynolds Metals, another U.S. aluminum producer, into its camp, for a while at least. But Reynolds, too, dropped out, causing Canadian newspapers to report rumors that "secret Washington pressures" had been brought to bear on the company.

U. S. officials deny this, claim instead that the lack of assurances extended Revnolds chilled the company's fervor.

When Reynolds pulled out, Frobisher shifted its studies to a smaller site on the Nass River, 300 mi. to the south. Although it says it has not dropped the idea of tapping the Yukon, Frobisher is now concentrating on the possibility of setting up the smaller development, with a potential of less than 350,000 kw. It reports that site findings so far are "favorable."

Meanwhile, the State Dept. maintains the U.S. proposal in its active files, and hopes for renewal of talks with Ottawa.

• Progress—However, resource planners in the U.S. keep improving the list of potential areas of growth in Alaska. They anticipate a tremendous lift in the population one day, and realize that hydroelectric power is the key to its dawning. But they also know that the only foreseeable way to develop this power is to entice heavy industry, chiefly aluminum plants, into the river valleys and along the coast.

They're pressing for more money this year to expand their studies. They feel now their estimate of over 8-million kw. of hydroelectric capacity, which could be installed in the territory, can become more than a dream.



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POCKET-SIZE wire or tape recorders...portable radios that fit in the palm of your hand...hearing aids built into eyeglass frames... these are but a few of the results of today's trend to make electronic devices smaller and smaller.

This concept works for military uses, too. It squeezes intricate control apparatus into tight quarters to direct the path of guided missiles . . . to transmit data from the inside of an artillery shell in flight.

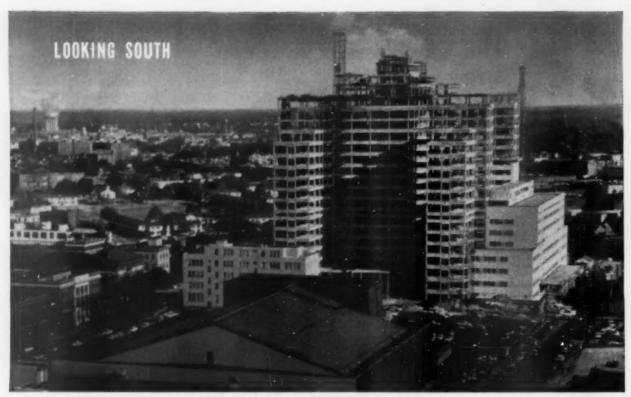
Important milestone in the progress of miniaturization was the development of the Mallory Mercury Battery. This amazing power source takes only a fraction of the space of conventional batteries. And its life is far longer, its output far steadier.

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other electronic components, too. Typical is a capacitor smaller than a lead pencil eraser—now teaming up with Mallory batteries in space-saving transistor circuits.

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ATLANTA'S NEW GRADY MEMORIAL HOSPITAL is one of hundreds of new hospitals and clinics found in cities—large and small—throughout Georgia, Florida, Alabama and Mississippi. The

\$20½-million Grady, designed to serve in a city of over a million, will have 22 stories, 1,060 beds, 19 elevators, 18 operating and 10 delivery rooms. The 26 acres of floor space will be ready to use by early 1957.

The last half of the twentieth century belongs to the South!



NEW BIRMINGHAM HOMES went up at a record pace in 1955; value of permits for new homes topped U.S. cities with a 67% increase. Miami was third and Atlanta fifth. Other Southern cities were not far behind. Shown is Birmingham's Crestview Hills area.

Ask any four well-informed men what they consider to be the most important single development in the South during the last ten years and you are likely to get four different answers. And there lies the secret of the South's remarkable growth and progress. Many developments are playing their part—industry, modern agriculture, greater educational and cultural opportunities, expanded research facilities, and more. The economy is as diversified as the living is pleasant.

The Southern Company is proud to have played a part in building the New South. Our investor-owned power facilities have consistently stayed in front of the expanding requirements of business, industry, and the men on the farms. Our people have generously contributed their time and efforts to worthwhile community expansions and improvements throughout the broad territory we serve.

The South is building—contributing more and more to a stronger and greater America.



ON THE WAY HOME go men of the day shift at Ingalls Shipbuilding Corp., Pascagoula, Miss. Firm built the \$22-million USS Glacier, largest ice-breaker in the free world. She is now scheduled for service with Adm. Byrd in the Antarctic.



THE STRIKE—M. A. Norden, Mobile retailer, is shown playing a 137-lb. tarpon in a recent Alabama Deep Sea Fishing Rodeo. Whether angling for big ones or going after bream in a lake, good fishing is only minutes away from most Southern cities.



PENSACOLA AT SUNDOWN finds streets busy and shops aglow. Since 1951, population has increased 45%; retail sales 46%; buying power 60%. Not a boom town, Pensacola typifies the healthy growth of cities in the steadily building South.



RAY STERILIZED HAMBURGER being tested by Patricia Clark, Southern Research Institute, Birmingham. This Armed Forces project deals with the flavor of meat preservation by atomic radiation. SRI is nonprofit; conducts varied scientific research for industry, government and individuals.



KING-SIZE CROP—Escambia County produces more soybeans than all other Florida counties combined. Bulk goes to nearby processing plant. Southern farmers have embarked on an amazingly varied agricultural program.



WHERE'S THE ONE-ROOM SCHOOLHOUSE? Practically gone. Wherever you look down South you see modern schools like this one near Tucker, Georgia. It is similar to many now being built under Georgia's \$200-million new school program. Today school buses bring good Southern schools within easy reach of every child.

Shaded section designates area served by the four investor-owned electric power companies in The Southern Company system,



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In Regions

Bank Tips Off Communities

On How to Woo New Industry

BOSTON-For the past two months the Monthly Review of the Federal Reserve Bank of Boston has been taking a look at industrial development techniques and how effective they are with top management. The findings could well make a primer for how a community should go about getting new industry.

The Review draws its conclusions from talks with senior executives of 78 multi-unit companies. These interviews, part of an over-all study, were sponsored by the bank, the Massachusetts Dept. of Commerce, and several private companies. Here are some of the meatier points from them:

· In most companies, decisions on plant location are made by more than one executive. To be effective, promotion should hit all of them. Statewide selling is best aimed at the operating level; city promoters should also focus on the real estate departments, which pick specific sites within the large areas chosen by operating divisions.

· Many executives claim that promotional material is valuable to them only when they are thinking of new locations. "Unless they are to rely on pure chance," the Review says, "industrial developers must therefore keep abreast of current trends in corporate thinking and be ready to strike while the iron is hot."

· Executives generally don't favor personal calls by area promoters, unless they are considering a move. Yet they rate direct personal selling as the most important element when they are in a "buying" mood.

· Direct mail is the most effective advertising weapon. Newspaper ads are next to worthless, the executives thought.

 Most companies claimed that neither southern nor northern concessions or "door prizes" attracted them. But being wanted by a community, they said, was very important.

· Among those interviewed, railroads have the best reputation in the development field, chambers of commerce the poorest.

Subway Engineers Approve

\$28.5-Million Feeder Loop

CLEVELAND-The proposed downtown subway that voters O.K.'d three years ago has inched a little closer to reality. A capsule version of an engineering report, released last week, found that the city can, and should, build it.

The subway, which would loop around downtown starting and ending in the Union Terminal, is estimated to cost about \$27.5million. In all, it would be about 2 miles long and would be built with "cut and cover" construction. That is, the ground would be excavated, tracks installed, then covered over. A sizable number of downtown buildings would have to be undercut to provide a direct route for the loop.

A start on the subway has long been advocated by Cleveland Transit System officials, who feel that the feeder loop is needed to make the city's new rapid transit lines pay (BW-Mar.12'55, p114). The engineering report, a fuller version of which will be out Feb. 1, recommends that the municipal CTS be consolidated

with the privately owned Shaker Heights rapid line, under a countywide authority.

Too Big Pensions Cause Colorado Woe

DENVER-Gov. Ed C. Johnson has handed the legislature the biggest and most dangerous, politically, of all Colorado's problems. He has asked it to submit to voters an amendment to put a top limit on the state's old-age pensions.

Colorado now pays its needy oldsters the highest old-age assistance in the nation-\$115 a month to a single person without other means, \$230 to a couple. Of this, an average of \$35 per person has been coming from the federal government, as its contribution to the state's outlay. It is this \$35 that is the crux of the trouble. Washington has said flatly that it will cut it off unless the state changes its assistance plan.

The stand of the Social Security Administration is that Colorado's payments are based not on the need of individuals-as required by the fedcral law-but on the amount of revenue coming into its pension fund. Colorado law requires that the pension kitty pay out all it takes in. And what it has taken in-from climbing liquor and sales tax revenues-these last few years has been considerable. The upshot has been rising pensions -and an embarrassment of richesthat Johnson now wants to put an end to.

Regions Briefs

Howard Hughes and Gov. LeRoy Collins have reached "a tentative agreement" on Hughes' long-rumored Florida venture. Guesses are it may be a Miami-based electronics opcration.

Airport for industry? Union Pacific RR has offered to buy the second-string Fairfax Municipal Airport in Kansas City, Kan., convert it to industrial use.

Washington Retail Market, long a haunt of Manhattan epicures, will be closed by the city in June. The reason: Rentals aren't enough to make it pay.

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The Nation's Largest Banks

	DEPOSITS-							RATIO OF D		
	(Dec. 31, in		R	ank	Perci in Le		Percei Cash &			
The Billion-Dollar Club:	1955	*1954	'55	# '54	'55	*'54	'55	*'54	'55	*'54
Bank of America (S.F.) Chase Manhattan (N.Y.).	\$8,803 6,789	\$8,271 6,929	2 3	1 3	54 % 54	49%	43%	47 % 55	13:1	18.1
First National City (N.Y.).	6,309	6,196	3	2	51	41	47	57	11:1	9:1
Manufacturers Trust (N.Y.)	2,956	2,802	4	4	39	30	61	67	15:1	15.1
Chemical Corn Ex. (N.Y.).	2,896	2,624	5	6	45	37	51	56	15:1	14:1
First National (Chi.)	2,718	2,688	6	5	49	48	54	56	13:1	13.1
Guaranty Trust (N.Y.)	2,714	2,600	7 8	7	55	53	55	59	7:1	6.1
Bankers Trust (N.Y.)	2,494	2,029	8	9	57	51	51	53	10:1	111
Continental Illinois (Chi.).	2,474	2,477	9	8	41	28	61	76	11:1	11:1
Security-First Nat. (L.A.)	1,976	1,947	10	10	32	26	70	76	14:1	15.1
National Bank of Detroit.	1,880	1,745	11	11	33	22	67	72	16:1	16.1
Hanover Bank (N.Y.)	1,754	1,501	12	13	46	40	58	64	11:1	10:1
Mellon Nat. (Pitts.)	1,674	1,620	13	12	45	35	54	61	7:1	7:1
First National (Boston)	1,613	1,571	14	14	54	47	51	57	11:1	12:1
Irving Trust (N.Y.)	1,558	1,407	15	16	48	44	58	58	12:1	11:1
American Trust (S.F.)	1,410	1,337	16	17	54	48	47	51	14:1	17:1
Cleveland Trust	1,353	1,292	17	18	47	40	50	57	16:1	16.1
The Runners-Up										
First Penn. B. & T. (Phila.)	984	961	18	22	54	45	50	55	13:1	13:1
Anglo-California (S.F.)	922	850	19	20	46	41	52	59	15:1	14:1
Philadelphia National	910	875	20	19	46	36	54	59	11:1	11:1
J. P. Morgan & Co. (N.Y.)	878	745	21	27	47	48	53	49	12:1	10:1

*Where major mergers occurred in 1955, 1954 data are based on combined totals of institutions involved. #Based on actual 1954 yearend figures.

@BUSINESS WEEK

A Big Year for Loans, Mergers

The nation's biggest banks will remember 1955 with a smile. Most members of the billion dollar club set new highs in deposits, capital funds, and net operating earnings; the volume of business loans was the biggest

It was a key year in banking. Two of the biggest mergers on record took place. They focused the attention of bankers and of federal and state authorities on the mass merger movement, which is estimated to have resulted in the absorption of over 200 banks during the year.

Toward the close of the year, the pace slowed, and in New York, Super-intendent of Banks George A. Mooney rejected a formal merger request for the first time in the history of the State Banking Dept. That merger involved two banks far from the billion dollar class—the County Trust Co. of White Plains, and the Ramapo Trust Co. of Spring Valley. Mooney said he wanted to "preserve the existing competitive structure in Rockland

The nation's biggest banks will. County," and he also laid down some member 1955 with a smile. Most conditions for future New York embers of the billion dollar club set mergers:

 Will the merger bring any lessening of competition by reducing the numbers of institutions in the area or by concentrating resources?

 Will the existing competitive balance in the community be seriously upset?

 Will the survival of the remaining bank or banks in the community be placed in jeopardy?

 Does the merger fit into the pattern of growth of the acquiring bank, especially in the light of previous acquisitions?

Actually, the merger trend may already have lost its steam, at least in New York City. There, such large banks as Guaranty Trust, Hanover Bank, Bankers Trust, Manufacturers Trust, and Irving Trust all scoff at the constantly recurring rumors of their own merging in various combinations. One banker opines, "You've just about seen the end of the colossal mergers in this

city-but I wouldn't be surprised to see many more outside New York."

· Few Shifts-Bankers were eager to check the yearend figures for those 1955 merger principals, Chase Manhattan and First National City. In Log billion dollar club, no major chance has occurred since the Chase-Bank Manhattan merger boosted the combined institution into first place in the city and second place in the nation (BW-Feb.12'55,pl16), trailing the Bank of America. But only \$400-million of deposits now separates the two New York banks. First National C registered a 1.8% gain last year, who Chase Manhattan was slipping be Bank of America, long the biggest, showed a 6.4% gain in deposits (now \$8.8-billion, about \$2-billion ahead of Chase Manhattan).

First National City's gain, percentagewise, was the smallest in the city. On the face of it, that would suggest that both it and Chase Manhattan were suffering some post-merger indigestion. But both banks deny that

the obvious explanation-elimination of duplicating deposits-had much to do

with their showings.

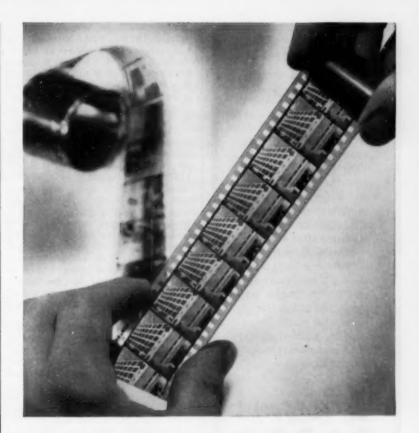
Chase Manhattan and First National City cite the same reason for the lack of pep in growth of deposits last year. Chase Manhattan notes that, "in common with other banks in New York, Chase Manhattan experienced some reduction in deposits during the course of the year, due chiefly to the restrictive policies followed by monetary authorities. As a result of these policies, correspondent banks and commercial customers found it desirable to draw more heavily on their accounts than would otherwise have been the case. At the same time, loans to nationwide businesses were rapidly expanding, and this resulted in a somewhat greater proportion of loan funds being spent in other sections of the country

· Nice Gains-Some billion dollar club members did rack up fair-sized gains in deposits despite tighter money in the last half of the year. Chemical Corn Exchange Bank moved up a notch, to the fifth spot, as deposits expanded 10.3%. Bankers Trust, with the biggest percentage increase-23%-of any billion dollar bank, pushed into eighth place, ousting Continental Illinois of Chicago. Hanover Bank of New York, up 10%, moved ahead of Pittsburgh's Mellon National, which showed a 3% rise. Two other New York banks also showed big deposit gains last year: Irving Trust's deposits rose nearly 11%, and J. P. Morgan & Co. edged nearer the billion dollar class with a 17.8% gain.

While deposits are always a basic measure of a bank's size and strength, some bankers find their happiest yearend reading in other figures. The brightest statistic of all was the loan volume, which built up to a record peak at vearend. The record demand for money is reflected in what the banks did with their money last year. In 1954, only half a dozen of the billion dollar banks had 45% or more of their deposits out in loans and discounts; most of their money was socked away in cash reserves and U.S. government securities. At yearend 1955, there were 13 banks with 45% or more in loans, and seven of those showed over

50% in loans.

· Fat Profits-Business loans totaled \$26.7-billion at yearend, up \$4.3-billion for Federal Reserve member banks. And the rising interest rates that resulted from the Federal Reserve's restrictive credit policy made that loan volume produce handsome returns. For most members of the billion dollar club, loans were up between 15% and 25%, and average interest earned on loans was way up over 1954. Bankers Trust loans, for instance, were up nearly 33% over 1954, and average



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interest earned on loans was 3.76% against 3.41%. First National City had average earned interest of 3.68%, the same as 1954. This was because a greater percentage of the bank's money was in commercial loans, whose yield is lower than consumer loans. Guaranty Trust earned an average of 3.10% on loans compared to 2.98% in 1954.

The record loan volume, plus the highest loan rates in over 20 years, has brought record net operating earnings for most large banks, with gains around 12% for the biggest banks. One big obstacle stood between what banks carned in their regular operation and what they have to dole out to stockholders. This was the fact that all banks, to meet the record demand for funds, had to sell securities, largely U.S. Treasuries, in a market characterized by slumping prices. This is an inescapable dilemma for the banker. In 1954, when loan volume slacked off sharply in the first half, banks put their money into government securities at relatively low prices. By the end of the year, demand for loans had stepped up markedly, and bond prices had stiff-ened, so that banks could sell their government bonds at a profit, and put the money into higher-vielding loans. Thanks largely to the profits on securities dealings, most banks showed gains in net profits that year.

• Unprofitable Sales—Last year, bond prices weakened in the last half, as demand for money picked up. This meant that banks had to sell governments, most of which had been bought when bond prices were considerably higher, and take losses on the sales, in order to supply their customers. The losses were often substantial. First National City, for instance, lost \$2.2-million for the year in its securities dealings, compared with a 1954 net gain of \$7.9-million. This drew down its over-all net profits from \$41.7-million in 1954 to \$40.3-million last year.

Guaranty Trust followed the same pattern: Net operating earnings rose from \$43.3-million before taxes in 1954 to \$50.3-million last year. But securities losses of \$1.7-million compared to profits of \$10.2-million in 1954 resulted in a year-to-year drop in net profits of over \$2-million. Like many other banks, though, Guaranty raised its dividends anyway.

The year's showings for major banks did little to resolve the basic question of whether consumer loans are worth the trouble. Guaranty Trust, Hanover, J. P. Morgan, and other banks that have disdained "retail banking" claim that the expenses of handling such loans and running a widespread branch system outweigh the large returns on the loans. While few banks matched Morgan's 35% increase in net operating earnings, most, whether they were

heavily in consumer loans or not, had gains of around 10% to 15%.

• Stocks Dawdle—Despite all the fine earnings figures—before securities losses are figured in—and in the face of better dividends, bank stocks have remained in the doldrums. The feeling is that investors have lost interest in them, turning to fields that promise bigger and quicker capital appreciation. And the high yields available in tax-exempt securities and corporate bonds have provided stiff competition for bank shares.

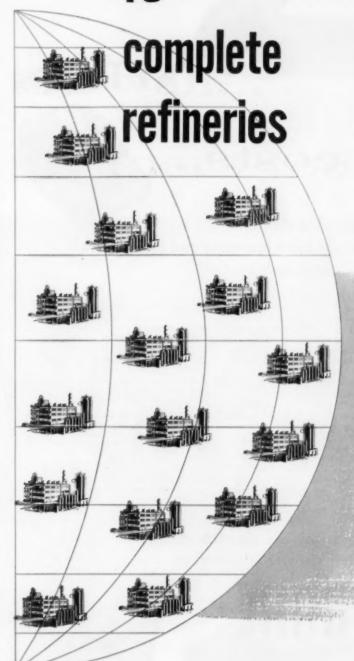
· Prophecies-The outlook for this year is a subject that is keeping bankers occupied this week as they convene for the Eighth National Credit Conference of the American Bankers Assn. in Chicago. George S. Moore, executive vice-president of the First National City Bank of New York says that "it seems self-evident that 1956 cannot show increases in gross national product comparable with the gains achieved in 1955." Moore also points out that "because of the higher short-term rates, some depositors are seeking the relatively attractive yields available from the investment of short-term funds at the expense of deposits." Many corporations are putting their dollars into short-term governments, or commercial paper to take advantage of high yields, and thus are cutting down on their bank deposits. Moore forecasts that business loans will "rise to new high levels before the end of the first quarter, but the forces that will operate for the balance of the year will flatten out the loan curve and result in a less than seasonal increase next fall.'

Most bankers feel that the greatest problem for 1956 is the political outlook. "If business confidence is shaken by political events, this could be a very different sort of a year than what most people expect," says one banker. So far, at least, confidence among

So far, at least, confidence among bankers is running high. A special survey of 154 banks by Bankers Monthly shows bankers guessing that business loans will be 5% to 15% higher in first half of this year than the first half of 1955. Biggest demand should come from: metals and metal products companies, petroleum, rubber, chemicals, wholesale and retail trade, and sales finance companies.

Adding to bankers' confidence is a general feeling that Federal Reserve authorities won't be making money any tighter, although no one expects any drastic easing off (BW-Jan.14'56, p23). Rumors of a hike in the prime rate have subsided with talk of another discount rate increase, but most bankers would probably agree with Moore when he says, "Banks today are in a tighter money position than has existed since the bank holiday." END

16



1945

- Refinery for B. P. M. at Cardon, Venezuela.
- Refinery for Koppartrans Oljeaktiebolag at Gothenburg, Sweden.
- Refinery for Venezuela Gulf Refining Company at Puerto La Cruz, Venezuela.
- Refinery for Societe Generale des Huiles de Petrole at Dunkirk, France.
- "Portable" refinery for U. S. Navy Department.
- Lube oil refinery for Cit-Con Oil Corporation at Lake Charles, Louisiana.
- Refinery for International Refineries Inc. at Wrenshall, Minnesota.
- 8. Refinery for Vacuum Oil Company Ltd. at Coryton, England.
- Refinery for Burmah-Shell Oil Company at Bombay, India.
- Refinery for Standard-Vacuum Oil Company at Bombay, India.
- Refinery for Standard Oil Company (Indiana) at Mandan, North Dakota.
- Refinery for Suntide Refining Company at Corpus Christi, Texas.
- 13. Refinery for Commonwealth Refining Company at Ponce, Puerto Rico.
- 14. Refinery for Esso Standard Oil Company at Antwerp, Belgium.
- 15. Refinery for Caltex at Visakhapatnam, India.
- Refinery for Neste Oy at Turku, Finland.

1955

In the past 10 years alone, Lummus has completed or is currently working on 16 complete refineries. Combined, they represent a large percentage of the refinery capacity constructed in the last decade.

But complete refineries are only part of the Lummus story. Separate units for any and all phases of refining from distillation to petrochemical production have been designed, engineered and built by Lummus — as additions to existing installations or as integral parts of new construction.

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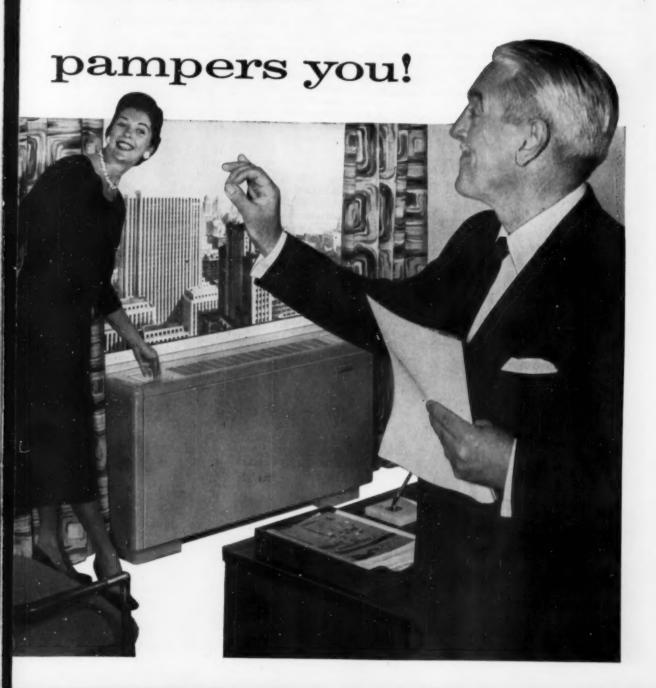
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the wall...



In Finance

Stockholders Regain Control Of Monon Railway After 10 Years

For the first time since the Chicago, Indianapolis & Louisville (Monon) Ry, emerged from bankruptcy in 1946, its stockholders have voting control of the system.

Last week the Monon's 10-year stock trusteeship ended. The road is busily substituting regular stock for the nonvoting "certificates of beneficial interest" that have been held by the owners of its equity issues.

Trusteeships have become the usual thing in rail reorganizations. But the Monon setup-in which three trustees had all voting power-was an oddity both through the length of its duration, and the factors that

led to the longevity.

When a federal court in 1946 finally O. K.'d a reorganization plan accepted by the Monon debtors, it did so with misgivings, doubting that the road could operate profitably all the time. So the court decreed that the trustees should hold power for 10 years instead of the usual five, and that they should explore the possibilities of selling the line to another carrier.

Now, in their final report, the trustees say that the merger possibilities had been thoroughly, and unsuccessfully explored. But they urge that the quest for a merger be continued, since "the difficulties of small scale . . . [rail operations] . . . are well recognized and Monon's isolated and unsupported position is somewhat unique

and not always comfortable.

The trustees did not say what roads they had approached. But the Chicago & Eastern llinois admits that it was one. Its president, C. M. Roddewig, adds that he is still interested in taking over the Monon "if we

could make a good deal."

Monon's 541 miles of road extend from Chicago to Indianapolis and Louisville. But it enters neither Chicago nor Louisville over its own trackage. And generally it has no direct conections with other trunk lines, while

its service area is mainly rural.

Still, Monon has done better than most people expected when it came out of bankruptcy. Since 1950 annual net has exceeded \$1-million. Last year profits hit \$1.4-million, a postwar record. The retiring trustees expect that volume to continue "good for most if not all" of this year.

Sen. Fulbright Goes to Bat For His Over-the-Counter Bill

Sen. J. William Fulbright (D.-Ark.) this week used his opponents' evidence to argue the need for his bill to bring over-the-counter securities under the same regulations as stocks listed on the exchanges.

Fulbright, who is chairman of the Senate Banking Committee, pointed to financial statements and proxysoliciting material submitted by Harold E. Wood, chair-

man of the board of governors of the National Assn. of Securities Dealers. Wood contends that the proposed legislation is "neither required nor necessary in the public interest."

Said Fulbright: "It is apparent from even the most cursory analysis of the proxy material . . .that most did not furnish enough information to enable stockholders

to exercise an informed judgment."

Very few of the 93 companies that furnished statements offered basic information on such points as officials' salaries, bonuses, stock options, debts, and other transactions. Often, said Fulbright, the names of nominees to the board of directors were not provided; if they were identified, little or no background on them was offered.

Outside of election of officers, Fulbright added, the forms seldom gave a chance to vote on the issues. Many did not provide even for dating a proxy-a requirement

with listed securities.

Fulbright was also dissatisfied with the sampling of annual reports of "over the counter" companies. Their greatest deficiencies: limited amount of non-financial information, shortcomings in financial coverage, treatment of such items as inventories, property valuations, and reserves.

According to Fulbright, a stockholder can't properly understand the condition of a business without (1) a balance sheet, (2) an income statement, and (3) a statement

of surplus.

"Of all the 109 reports examined," he said, "only 31 contained complete sets of these statements in substantially the same form as is required of registered companies.'

The Banking Committee is holding up action on Fulbright's bill until it completes an analysis of some 1,500 questionnaires sent to unlisted companies by the Securities & Exchange Commission.

Insurance Plan Worked Out For Private Atomic Plants

A big stumbling block to private construction of atomic energy installations was removed when 70 stock casualty companies announced formation of a syndicate

to underwrite possible radiation damage.

While the group isn't firmly set yet, tentative plans call for insuring private atomic installations, with up to \$50-million worth of coverage on all phases of construction, operation, and maintenance. The coverage would apply to "third parties," that is, bodily injury or property damage suffered by persons other than the owner

and operator of a reactor.

The coverage is far less than had been originally thought necessary (BW-May14'55,p134), and probably will be augmented by additional insurance covering owners of the property and the atomic installation itself. A big problem yet to be solved is insuring against damages that might be caused by exhaust gases or other atomic wastes that might contaminate water supplies. Groups representing both the stock companies and the mutual companies, which are expected to present their own plan for atomic risk insurance, are still working on these problems with the Atomic Energy Commission.

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Aluminum Takes a Bigger Bite

New and broader uses for the metal are creating more demand and straining at the industry's capacity.

In Detroit, auto makers are using more and more for everything from trim to automatic transmission.

In construction, it's going into skyscraper exteriors, building interiors, even into decorators' knickknacks.

It's the same old aluminum—but it's riding a rainbow to what the industry hopes is its pot of gold. In fact, it's riding two rainbows, with gold at the foot of each.

One rainbow hangs over the automobile industry, where aluminum is taking a bigger bite every year. The other shines in the construction field, where builders are turning more and more to aluminum.

Last week, both Aluminum Co. of America and Reynolds Metals Co. made announcements that indicate the industry is convinced it's chasing something more substantial than an illusion.

Alcoa said that 1956 passenger cars will carry an average of 35 lb. of aluminum, a climb from 29.6 lb. in 1955 models. To some, this may not sound like much, but it means that the automotive business alone—for years a mere "hope for the future" for aluminum—will be cating up 123,000 tons of the metal per year.

New Capacity—Reynold's announcement seems equally significant. The company said that it had landed the biggest industrial aluminum order ever placed. Ford Motor Co, will buy 320,-000 tons of molten aluminum from Reynolds over the next 10 years.

Reynolds will produce the metal at its new aluminum reduction plant, at Listerhill, in northwest Alabama. Ford will build a foundry near the plant.

No matter how you look at it, this is a whopping order. According to trade estimates, Ford's total consumption of aluminum is running now at about 30,000 tons a year. If you add the Reynolds order to that, you more than double Ford's annual consumption of aluminum.

 No Mirage—Aluminum's second rainbow hovers over the building field, where, in the past four years, some 300 new buildings were clad in aluminum skins. In 1955, the colored aluminum curtain wall was perhaps the industry's biggest single development.

Building construction has displaced transportation-which includes trucks,

airplanes, railroad cars, as well as autos—as the biggest single market for the aluminum industry in the past three years. Buildings took 20% of the industry's total production last year.

Gold-Plated Cadillacs—But the sizable increase in aluminum use that has already been chalked up by the auto industry should juggle the balance a little. The metal's biggest jump in 1956 car use is in the trim. Gold-finished aluminum for exterior decoration is on three of the '56 cars—Cadillac, Hudson, and Packard. The new De Sotos and Plymouths have some gold-finished aluminum trim and natural aluminum grilles. Studebaker and Nash carry aluminum trim too.

Colored aluminum-starting with this year's fairly extensive use of goldis certainly one of the industry's most potent weapons in its drive to launch, or rather to recapture, the automotive field for aluminum. (In the early days of the automotive industry, aluminum had a strong hold. It lost out to sheet-steel some 20 years ago.)

In the next few years, aluminum will show up in both interior and exterior car trim—in red, blue, green, copper, silver, even platinum. Alcoa predicts that aluminum applications of all kinds on cars will rise to 49.8 lb. by 1960, and to 81 lb. by 1965. This growing automotive market is one of the main reasons why aluminum production rated second only to steel in 1955.

Consider also that with cars becoming increasingly heavy, aluminum becomes more and more desirable. Weight advantage certainly favored aluminum pistons, which are used in all cars today. For the same reason, Alcoa sees a definite incentive in Detroit's planning to use aluminum engine blocks in the future. Granted, the aluminum engine block will be feasible only so long as car manufacturers stick to present engines-not for turbines. But Alcoa is banking on at least 10 more years of piston engines. If gas turbines come of age in 10 years, the story may have to be rewritten.

• New Uses—Today, aluminum's major application in cars is in automatic transmissions, where about half of the 35 lb.-per-car is used. The engine uses about 10 lb. of aluminum; the body trim, only about 2½ lb.

If aluminum were applied to all automotive parts that can be converted to its use, says Alcoa, the total per car would top 300 lb.

• \$75-Million Bet—The Reynolds plant at Listerhill proves that company's optimism. The new plant will cost between \$75-million and \$80-million. Reynolds already has a plant in operation at Listerhill, with an annual capacity of 50,000 tons—soon to be boosted to 70,000 tons. The new plant will pile an additional 100,000 tons on top of that. It will boost Reynolds' total capacity by more than 20%—to more than 550,000 tons per year.

than 550,000 tons per year.

Ford will take less than a third of the new plant's output. The rest, says Reynolds, will go to "relieve the short supply of primary aluminum."

R. S. Reynolds, Jr., president of Reynolds, said last week that the company was encouraged by the sharp increase in the use of aluminum by the auto industry. He said that the rising consumption of the metal by the car makers was indicated by the fact that some models now contain as much as 197 lb. of aluminum, compared with 10 lb. per car just 10 years ago.

 Aluminum Skyline—Aluminum's star shines almost as brightly—and in color when you look at construction uses.
 Use of the colored metal for curtain walls—building skins—though a small part of the whole market, had its greatest increase last year.

About 12 buildings now under construction around the country will have colored aluminum panels. Alcoa's own building, finished three years ago, was the first to take on a hue—a gun-metal gray, now conservatively dim when considered alongside the bright blues and greens that have been built recently.

• Indoors, Too—Alcoa sees a tremendous potential for aluminum in the school and hospital construction market for 1956—particularly in colored aluminum panels. But the market is broader than panels. It includes doors, ceilings, ventilating equipment, even the knickknacks of interior decorating.

Colored panels got a boost last fall when Alcoa began delivery of precolored, all-shades-of-the-rainbow aluminum, direct from the mill-either in flat sheets or coil for trim (BW-Oct. 15'55,p84). END

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NEW CONTROLS REVIVE OLD NICKEL PROCESS Plating the Dry Way

In 1890, an Englishman named Ludwig Mond was studying the refining of nickel ores. In his experiments, he passed carbon monoxide over nickel ore and got a new product-a colorless liquid called nickel carbonyl. Mond found that if he exposed the new liquid-under heat-to such substances as plaster of paris or wood the nickel would come out of the liquid and stick. Mond had found a new nickel-plating process.

But he didn't get very far with it and never found a good method of control. For most of the years since, his idea has lived in obscurity in a handful of textbooks.

Now this is about to change. Gas plating, which is the up-to-date name for Mond's discovery, is about to be harnessed to the production line, for plating certain materials where other processes will not serve. Powdered metal is an example. You cannot plate a piece of powdered metal by dipping it into a hot solution or by electroplating it, because in both cases the powdered metal would be exposed to moisture. The pores of the powdered metal would trap the plating solution, which would lead to corrosion. But powdered metals can be gas plated. Gas plating is a dry process; because there is no moisture, there is no corrosion problem.

• Improvements-The Commonwealth Engineering Co. of Ohio, in Dayton, has been experimenting with gas plating-off and on-for the past 15 years. By adding a carrier gas to the nickel carbonyl, Commonwealth found that it could control the plating process. The company made other modifications, too. It added directional jets within the plating chamber (picture) so that the carbonyl-carrier mixture is aimed at the object to be plated rather than allowed to drift through slowly. This kept the mixture from decomposing. Commonwealth also narrowed the size of the chamber, and shot in excessive quantities of carbonyl and gas. This enabled the nickel to get around on all sides of the work place.

Currently, Commonwealth is working on several new projects: gas plating of synthetic fibers, plating for printed circuits, plating metal on wire, plating glass fibers. It says the major advantage of gas plating is that it makes possible the plating of non-conductors of electricity. And it's a fast process-said to be at least 60 times as fast as electroplating. In one case, Commonwealth is said to have plated 45,000 miles of loosely-gathered glass fibers in an hour -using just 75¢ worth of nickel carbonyl, 8¢ worth of carbon dioxide, and 16¢ worth of electricity.

· Other Vistas-The company says that it is possible to deposit metals other than nickel. It has used both aluminum and stainless steel. Also, it has plated tungsten carbide on steel, which could open up the field of cutting tools to the

gas plating process.

At present, gas plating is normally not competitive with electroplating. For each application, the company's technicians need up to six months' research to evolve a production line apparatus. The process stays basically the same, but no one machine can perform all gas plating jobs. END



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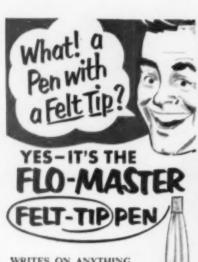
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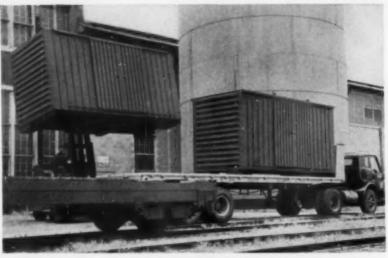
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SMALL FLAT CARS, pool operation, promise expansion for truck-by-rail. They're . .

Tailored for Piggyback

A possible new stage in "piggybacking" on a national basis may have opened last week with two simultaneous and related announcements:

 ACF Industries, Inc., is producing a new type of rail car (picture) especially adapted to hauling trucktrailers.

 Trailer Train Co., an outfit formed only two months ago to provide railroads with a national pool of special cars to carry trailers, was buying 1,000 of the new cars.

The new ACF car is claimed to cost and weigh less than half as much as a standard flat car while carrying 70% as much weight. It is 35 feet long—just enough to handle a single truck trailer. (The average flat-car is about 50 feet long.) Trailer Train is not only buying the special small cars, but it's also taking over the 500 special 75-foot trailer-carriers of the Pennsylvania RR and Van Car Co., an outfit that leased cars to the Pennsy.

 Growing Fast—Piggybacking, while still a tiny part of total rail business, has been showing spectacular increases.
 Today, 34 Class A roads offer some version of the truck-train combination —11 more than a year ago—with some roads reporting threefold and greater increases in that business.

But one of the biggest blocks in growth of the piggybacking has been the problem of interchange. By and large, trailer service has been offered only over the individual carrier's own lines. Variations in equipment, plus delays in returns made many roads reluctant to let cars move on. The Trailer Train setup envisages a central pool of standardized cars to service roads for full interchange.

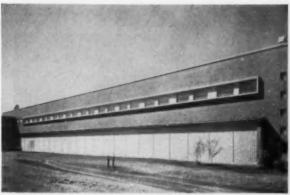
Right now, Trailer Train is owned by three companies; the Pennsy, Rail Trailer Co. of Chicago (formed in 1952 to "act as intermediary between rail and truck companies" in piggyback operations, and which through a subsidiary, Van Car, was the actual operating arm for the Pennsy's piggyback hauls), and the Norfolk & Western RR. But plans are for Trailer Train to sell its stock to about a dozen other roads, and to act as central piggyback coordinator for its "member."

With Trailer Train controlling the pool, doling out cars as needed, individual roads can duck such headaches as buying special cars, keeping them up, trying to get them back.

The Pennsy is somewhat reluctant to talk about how big a voice it will have in the new operation, but it may be significant that Trailer Train's president is James P. Newell, a Pennsy vice-president.

 Convertible—The ACF car may have some other advantages for Trailer Train. ACF claims for the car include easy conversion into box, hopper, gondola, or tank cars through simple readymade attachments. So Trailer Train conceivably could be equipped to help out with other shortages of members at tricky times.

If the pool idea takes, it may mean a rapid increase in truck hauling by rails. Roads have already expanded the service far beyond the original concept of hauling trailers of truck common carriers. Some roads are now hauling shipper-owned trailers, and a large proportion of the roads are offering all-railroad service—pick up, haul, and deliver—at one inclusive rate that's competitive with trucks. END



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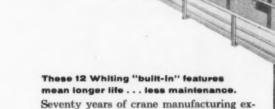
This is what pilots now see as they bring in their planes for a landing at New York City's International Airport. The new approach lighting system was designed by Sylvania Electric Products, Inc., to guide incoming planes when the visibility is limited, and to lessen air traffic control problems. The system consists of 20 lighting units spaced along the approach to the runway. Each unit uses an xenon flash tube that produces a beam of over 30-million candlepower.

Each unit flashes twice every second, in sequence, giving the effect of an animated arrow pointing to the runway. Because of their short duration, the brilliance of the flashes do not blind the pilot. They can be seen, however, through fog and low clouds.

The system is known as EFAS (Electronic Flash Approach System). Sylvania expects other airports to adopt it. · Source: Sylvania Electric Products, Inc., 1740 Broadway, New York City



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The man in the picture is using a tool that runs nuts onto bolts to a controlled torque, and then shuts itself off. Called Impactool, it was developed by Ingersoll-Rand, Inc. The tool can be adjusted to tighten the nut to any desired tension. When the nut reaches the desired tightness, the tool's impact mechanism rebounds, tripping a valve that shuts off the machine. The tool comes in two different sizes.

 Source: Ingersoll-Rand, Inc., 11 Broadway, New York.

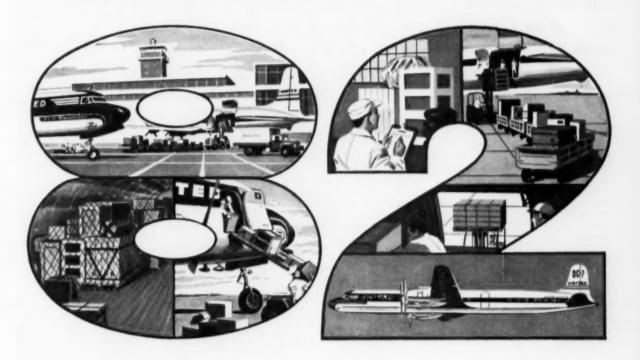
NEW PRODUCTS BRIEFS

Quieter, smoother air travel can be attained by using its 35-lb. package of electronic instruments, says Hamilton Standard Div. of United Aircraft. The unit exactly synchronizes the speed and pitch of the propellers of multi-engine planes. Hamilton Standard says it would take 800 lb. of soundproofing material to achieve equivalent cabin quiet.

Centralized lubrication for autos and other internal combustion vehicles has been developed by Alemite Div. of Stewart-Warner Corp. The system delivers a controlled amount of lubricant to as many as 30 points or bearings when the engine is started. A panel light shows when the system is working,

Vacuum packing in plastic bags can protect objects that are damaged by exposure to air. A Dutch company, Machinefabrick en Constructiewerkplaats, the Hague, has developed a machine that draws the air from the bags and seals them at a rate of 40 bags per minute. The machine can also replace air with neutral gases such as nitrogen.

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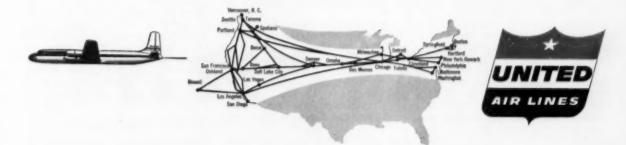


Whatever you ship, wherever you ship, here's an important fact to keep in mind. United Air Lines links more domestic markets in the East, the Midwest, along the Pacific Coast and Hawaii than any other carrier, air or surface.

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Are The Economists All Wet?

Sidney Schoeffler, Massachusetts professor, flays his fellow economists for the uncertainty of their forecasts. He says their methods are wrong.

He proposes wider use of computers to digest data, greater use of decision theory to arrive at courses of action.

His book is already stirring discussion—and some doubt that economics is quite ready for his method.

A good many businessmen feel that economists are groping in the dark—they can't seem to agree among themselves, can't forecast accurately, can't recommend policies that will produce the results they're after.

Economists generally shrug off criticisms, but they will have more difficulty in brushing off a devastating criticism just launched by a 31-year-old member of their own profession: Prof. Sidney Schoeffler of the University of Massachusetts.

In a book called The Failures of Economics, published by the Harvard University Press (Cambridge, \$4.75), Schoeffler concludes that it was "an altogether first-rate mistake for the field of economics ever to develop the way it did." He finds that the history of economic thought constitutes "a gigantic blind alley, against the end of which economists have been bashing their heads for decades."

Indigestion—Economics is fundamentally wrong, he holds, in being based on analytical methods that are completely inappropriate to the subject matter.

Its subject matter is buying and selling, making and using, saving and borrowing, economic growing and shrinking by millions of people, acting individually or through institutions. These factors are complicated by "outside" forces, such as geography and weather.

Economics' failure is its inability to analyze all these factors efficiently or correctly. If economists really knew how to handle economic and other information, Schoeffler suggests, they would be able not only to analyze the past or present, but also to predict the future.

Prediction is the proof of a science's pudding. And it's the basic criterion by which one can separate the sciences that are nowadays called "hardware" (physics, astronomy, geology) from those called "software" (the social sciences).

 Handicaps—The essential reason for the poor forecasting performance of economics as compared with, say, physics, is the difference in the subject matter, says Schoeffler. More specifically, it lies in the way this material can be organized.

Physics deals with events in what the scientist can, with little harm to the practical aims of his work, consider to be an essentially closed system—one not subject to influences coming from outside the system. The physicist who is studying the properties of matter need not concern himself with the French national elections, swings in the business cycle, or the number of families

who own television sets.

Economics, says Schoeffler, is concerned with events in an essentially open system—which no amount of additional information will ever succeed in "closing" and which is subject to influences of every conceivable sort: political, social, biological, meteorolo-

gical, physical, and others.

• Basis for Prediction—Any science that grapples with an essentially open system will be poor at prediction. This applies to some sciences that are not usually thought of as "software"—for instance, meteorology, whose forecasting record is not much better than that of economics. To predict next year's weather, as Sir Arthur Eddington points out, you would need:

 Extremely detailed knowledge of present conditions. A small local deviation can cause an ever-expanding influence.

 Information about the state of the sun, to predict changes in the heat and corpuscular radiation it sends us.

 Data from the bowels of the earth, to predict volcanic eruptions that may spread a dust screen over the atmosphere.

 Penetration into the human mind—since a coal strike or a great war may affect the atmosphere—or a carelessly thrown match may cause deforestation, which in turn will change rainfall and climate.

But even meteorology can borrow heavily from the physical sciences for its information. Economics can't, or doesn't use this advantage. Even the strictly economic "facts"—prices, costs, national production, national income, savings, etc.—are not facts at all but highly complex concepts or synthetic indexes that stand for an infinitely larger universe of facts.

Thus, economic data are subject to great margins of error. And all economic data are highly volatile: Every new set of circumstances is unique, and the economic actors—people—possess wills of their own, which they are more or less free to employ as irrationally as they choose.

 Imitation of Life-Faced with a wideopen system whose range is virtually as broad as the universe itself, economics committed the blunder, says Schoeffler, of trying to imitate sciences that deal with closed systems.

Economists, he says, took their mathematics and deductive techniques from physics, their statistics from genetics and agronomy, their systems of classification from taxonomy and chemistry, their model-construction techniques from astronomy and mechanics, and their methods of analyzing the effects of actions from engineering.

 Case Studies—Schoeffler seeks to prove his charges by presenting a merciless series of case studies of the work of well-known economists who represent practically every current approach to economic analysis.

These case studies cover the work of such "empiricists" as the National Bureau of Economic Research, who gather masses of facts as a means of discovering economic principles, and of such "theorists" as Colin Clark and Harold M. Somers, who employ abstract logic to deduce economic truths.

Empiricists charge the theorists with the sterile manipulation of empty concepts and symbols while neglecting to examine the actual world. Theorists charge the empiricists with blind statistics-grubbing, useless historical reporting, piling up mountains of indigestible brute facts. Schoeffler concludes that both criticisms are right.

Having beaten the brains out of modern economics, Schoeffler is just as rough on that form of economic analysis which he calls "story telling." The economic story-teller, he holds, may give a psychologically satisfying tale of why something seems to have happened, but he



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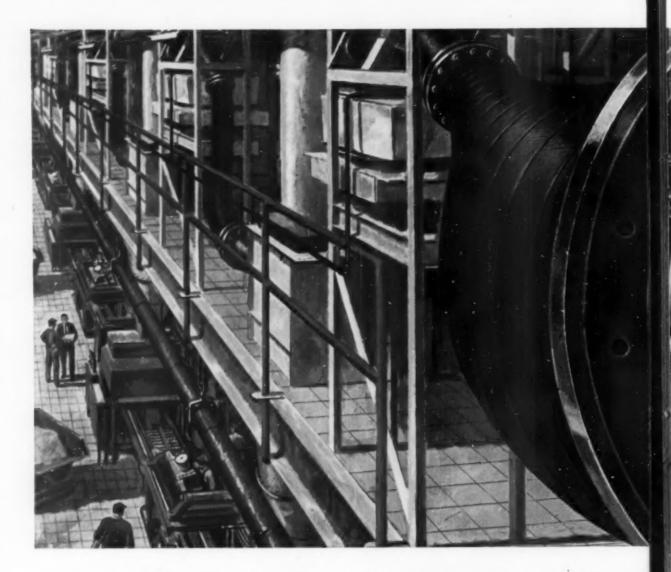
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A familiar word is fast acquiring a new meaning. Scramble! . . . unidentified aircraft. It sums up the alertness of our air defense. It represents our greatest safeguard against invasion. To the companies that manufacture our jet aircraft, another name now represents the highest standards in aircraft components: Kelsey-Hayes.

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Surest Way to Stymie a Man-

You're the chief engineer at one of the country's largest automotive foundries.

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One particular pride is—or was—the pneumatic system that sends oil-treated sand hurricaning through steel pipe at 70 m.p.h. On the drawing board it seemed a fast, clean and cheap method of getting the sand from the treating unit to hoppers above the coring machines. In practice, it's become a daily headache.

For wherever the pipe takes a sharp bend, the hurtling sand chews through it in a matter of hours. In some cases you answered the problem by repiping. But on the switches used to divert the flow from the main line to the hoppers, you're stuck with a 45° dip. Here the heaviest steel pipe lasts only two shifts-a mere 16 hours.

Because of the high labor and materials costs involved in the frequent replacements, you've got to do something but what?

Then one day, while talking to the G.T.M.—Goodyear Technical Man—about his conveyor belting and how it resists wear so well, you mention your pipe problem. He comes right back with a suggestion: Diversipipe — the heavy-duty rubber pipe, especially designed for handling abrasive or corrosive materials.

You like the G.T.M.'s suggestion. You order several lengths of Diversipipe.

First thing you notice about Diversipipe is that its flexibility makes for easier installation. Second, it can be quickly rotated to distribute wear. But the biggest thing is the fact



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can't prove it, and he can't use it to forecast the future.

Schoeffler insists that we recognize such "literary" explanations for what they are: makeshifts and expedients, which we rely on because we have nothing better. He includes in this category the reports of the President's Council of Economic Advisers.

· Sloppy Logic-At the recent convention of the American Economic Assn., however, Schoeffler did concede that a good case can be made for what he

called "sloppy logic."

"As long as economic analysts habitually proceed from invalid and unrealistic premises," he said, "there can be no sensible objection to sloppy logic. Indeed, it is only by the use of such logic that valuable conclusions can be derived from invalid and unrealistic premises.

Nevertheless, he concludes that, while informal logic does permit sound instincts to prevail over false premises, the road to progress doesn't lie in that direction. Instead, he suggests that economics give up the attempt to become a "hard" science and face up to the realities of its open system.

· Blueprint-For its factual information, Schoeffler thinks, economics should draw heavily upon the natural sciences and social sciences such as psychology, anthropology, sociology; for its analytical methods, upon the systems of modern symbolic logic of Rudolf Carnap and others; and for its policymaking, upon general decision theory.

Decision theory deals with the problem of how to find the best course of action in any given set of circumstances when information may be limited, spotty, and volatile, and when "actors" in the problem that's being analyzedas in the case of enemy generals or rival businessmen-can make decisions of

This theory started in the 17th and 18th centuries with work on mathematical probability. It has been racing forward in recent years as a result of work in operations research and the theory

of games.

· Pinning It Down-Schoeffler is optimistic that, by developing systems of analysis based on these tremendously complicated techniques, economics will be able greatly to narrow the probability range within which economists can predict the future. This would improve their ability to suggest sound policies.

He sees the processing of the enormous materials of economics-including both quantitative and non-quantitative information-as manageable by use of

high-speed computers.

Thus, Schoeffler would construct methods of economic analysis that would be able to take account of all pieces of relevant information, not just

those that fit into a preconceived and artificially closed system. In a sense, then, he is proposing a method of analysis, of a very complex and rigorous kind, which is similar to the way a shrewd businessman instinctively makes his decisions.

• Birth of a Hunch-The businessman gathers into his head a tremendous amount of information that applies in various ways to his business and affects its future. He mulls this complex mass of information around in his head, putting the pieces together without formal discipline, and he comes up with a decision that he's willing to bet his money on. If he's a good businessman, he's generally right; if not, hail and fare-

Schoeffler-like decision theorists generally-tries to clear away the mysteries from this process, and, by handling more information more rigorously than a lone businessman can do it in his own head, to come up with better solutions. He looks toward forecasts and policies that reduce the range of prob-

· Critical Appraisal-Schoeffler's book is bound to produce much soul-searching by other economists, who will find his trenchant criticisms hard to ignore. Harvard's Wassily Leontieff, one of the world's leading economists and a brilliant mathematician, finds The Failures of Economics "the best critical study dealing with broad methodological problems of economics, and social sciences, in general, which I have seen in many years." But, says Leontieff, "this doesn't mean I agree with its positive side.'

Leontieff thinks economics, with all its faults, is already further advanced than the other social sciences. Attempts to load the findings of anthropology, psychology, sociology, etc., into economic analyses, he thinks, would simply complicate and confuse the materials that economists are presently handling, with no net gain in exactitude. He regards attempts to unify the social sciences, at this point in their separate

development, as premature.

The professor, who supervised the doctoral dissertation on which Schoeffler's book is based-Adolph Lowe, of the New School for Social Researchis also dubious about the book's positive side. The vastness of economics' open system and the poor quality and volatility of economic information make Lowe pessimistic about the chances for significantly improving economic forecasting and policymaking by means of an enormously complicated, rigorously logical, model-building, data-processing approach.

Lowe thinks that economists and businessmen, in looking ahead, will always have to rely on "good judgment, experience, and a sixth sense." END

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Pensions: Cheaper by the Dozen

For years, low yields, high costs, a mass of laws have hamstrung all but bigger pension trusts.

Now the Treasury has approved a plan for lumping many small funds together.

This way, costs fall, yields rise—and so a rush to form these group trusts is expected.

For all but the bigger corporations, the cost of running pension and profit-sharing trust plans for employees has long seemed out of all proportion to the money the funds can earn. Medium and small-sized companies that operate plans face big difficulties when they try to diversify their investments to earn more money; banks that handle their funds take a significant slice of yield in return for their services.

But now a nod from the Treasury Dept. has opened a way for these small and medium sized trust plans. If bankers and tax experts are right, there'll be a new rush of business in pension and profit-sharing plans.

What opened the way was the Treasury's recent approval of a proposal put to it by Manufacturers Trust Co., New York. The bank asked for, and got, permission to lump together any number of company benefit plans—which qualify as tax exempt—into a single large trust fund.

The ruling has two important meanings for companies that are studying pension and profit-sharing plans for

their employees:

 If provides a new vehicle for small and medium-sized companies to invest pension and profit-sharing money in widely diversified higher-yielding stocks and bonds.

 It cuts in half the cost of administering small individual trust

portfolios.

• Best for the Biggest—Until now, only larger corporations were able to take fullest advantage of trusteed pension and profit-sharing plans. They have been able to build widely diversified trust fund portfolios because their assets are large. And now that many companies hold firm belief in long-term inflationary trends, they have been doing their best to get more common stocks into their trust portfolios, thus pegging retirement pay closely to the cost of living.

But most small and medium-sized companies have had to forego that approach. Some prefer to use insured plans—and get fixed payouts and premiums. Others have stayed away from pension or profit-sharing plans altogether.

• Raft of Problems—Cost has been one of the barriers for the small and medium-sized funds. In New York, for example, the average fee a bank gets for handling any size of pension trust is \$500 for the first year and \$350 a year thereafter. If a small pension fund is operating on capital of \$25,000 on which it gets a 3% yield (or \$750), it will have to turn over almost half its yield to its bankers.

There are other drawbacks as well as

costs:

• In a small pension plan group, there'll be wide salary variations among participants. One or two executives in the group may make \$50,000 a year, while most of the other participants may make only \$5,000. Groups like this have to keep a sizable percentage of their funds in liquid assets or in low-yield government securities: If one of the \$50,000-a-year members retires or dies the drain on the fund is heavy.

 Small pension funds are working on such small amounts of capital that they cannot keep their investments as widely diversified as most investment managers would like.

 Logical Step—Banks have long seen that one logical step for small funds to take would be to pool their cash with that of other funds in one investment trust.

This remedy grows out of an old banking procedure by which small individual trusts are pooled in a common

rust fund.

In the last few years, these common trusts have spread fast. One estimate puts the number of common trusts at 200, and the total of participating accounts at 66,060. Their total assets amount to \$1½-billion. But banks and trust companies have made only a few guarded attempts to put this practice to work in the corporate pension field.

 Rules and Laws—There are a number of reasons. For one, tax regulations have never been clear. In some cases, the Treasury has permitted banks to set up qualified investment groups. But these groups were treated as corporations subject to a stock issue tax—for the various shares of participating funds—and 90% or more of the pool's income had to be distributed to each of the commingled funds each year.

What's more, Federal Reserve Board regulations covering common trusts put a \$100,000 size limit on individual funds and ruled that no single fund can have more than a 10% interest in the

pool.

Way Out—About a year ago, Manufacturers Trust decided it would try
to establish a method of handling the
pension and profit-sharing plans of
small and medium-sized companies
that would be unencumbered by all
these regulations. And now:

By the Treasury's ruling, Manufacturers Trust's Group Trust Program is itself qualified, under Section 401
 (a) of the Revenue Code, as a tax exempt employee benefit or profit-

sharing plan.

 Because it is so qualified, Manufacturers Trust's plan is not affected by regulations laid down by the Federal Reserve Board and the states that cover ordinary common trust funds.

 And there's now no question about the tax status of the plan, or about the bank's treatment of the pool-

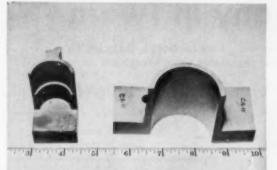
ing arrangement.

The method is simple: An employer establishes a plan that qualifies as tax-exempt. He signs a participating trust agreement, which provides for participation by his company's plan in the group trust. His payments are channeled through his own plan, but for all practical purposes, the money is handled as part of the group's assets.

Companies can join in the group trust any time, and can withdraw on 60 days' notice. The bank's charge for handling individual plans within the group is fixed at ½% of each plan's assets annually, subject to minimum fees of \$250 for the first year, and

\$150 a year thereafter.

Since the start of the plan about a month ago, 11 companies have joined Manufacturers' Trust to participate in its group fund. Their annual contributions range from \$6,000 to \$125,000; their numbers of employees from 10 to 800. And when the plan gets up full steam, Anthony J. Kearshes, Manufacturers Trust vice-president, guesses that from 50 to 60 smaller trusts will be joining the group each year.

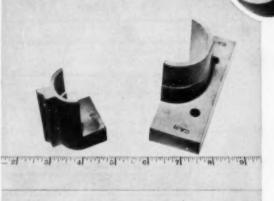


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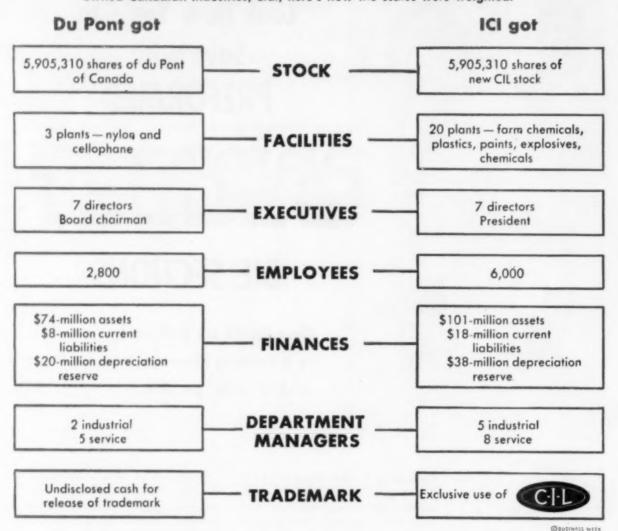
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Splitting a Company in Twain

When du Pont and Imperial Chemical Industries, Ltd., had to cleave their jointly owned Canadian Industries, Ltd., here's how the scales were weighted:



And Making Both Parts Thrive

A year and a half ago, E. I. du Pont de Nemours & Co. and Imperial Chemical Industries, Ltd., of Britain (BW—Dec.3'55,p132) wound up their joint ownership of Canadian Industries, Ltd., because a U.S. federal court ruled that it violated the Sherman Antitrust Act.

Under the decree, du Pont and ICI had the choice of selling out to another or selling either or both of their interests to third parties—or they could split the business and go into competition with each other. They decided

on the last alternative, though it was by far the most complicated course.

The table above shows what happened when the big Canadian company, with \$150-million in annual sales, was sliced down the middle. In the next few weeks, the two scions of the original company will issue annual reports on their first full calendar year of separate operations. It's already clear that the sum of the parts will add up to more than the whole.

• The Two New Companies-As a result of the fission of Canadian In-

dustries, Ltd., these two companies came into existence:

 Du Pont of Canada Securities, Ltd., of which du Pont of Canada is the operating company.

 Canadian Industries (1954) Ltd., as a subsidiary of Imperial Chemical Industries. This month the company dropped the parenthetical "1954" from its name.

In the old Canadian Industries, ICI and du Pont each owned 41.3% of the common stock; the public owned all the preferred and the rest of the com-

mon shares. In the new companies, each parent owns 82.3% of the stock, and the public owns the rest.

· Give and Take-Even with ownership by parent companies evenly matched, it wasn't easy to divide such a large and complex business (23 plants, 9,000 employees, at least seven different production lines) without killing it. Du Pont and ICI each sent a sevenman team of analysts to Montreal to work out a split of assets. These teams worked six months evaluating the assets of the old company. The big decisions were made by top parental manage-

On the surface, it looks as if ICI got the better of the deal in plants and products. Its subsidiary is running above \$100-million a year in sales, compared with about \$60-million a year for the du Pont affiliate. However, except in one or two points, the split worked out as du Pont wanted. The U.S. company decided at the start to seek a compact nucleus for future growth, and that's what it got.

ICI acquired five departments: explosives, paints and coated fabrics, agricultural chemicals, heavy chemicals, and plastics. Du Pont settled for one department: film (cellophane) and textile fibers (nylon).

The U.S. company would have liked a piece of the explosives and paints divisions, but the parents had agreed at the outset that no industrial department would be cut up. In the bargaining, ICI got all the explosives and the paints.

• Balancing Act - The negotiators arrived at a valuation for each plant not only on the basis of present worth but also the marketing potential of each product line. When it was all totted up, ICI had the greater valuation for its acquisitions. To balance accounts, du Pont was awarded \$16.8-million in cash and securities.

· Fissioning the Brass-The division among directors and executives was fairly easy, since each company tended to take back the managerial talent it had supplied to the old setup.

The jointly owned company had 15 board members-four from Imperial, four from du Pont, five company officers, and two outsiders. Du Pont took back its four men, plus two company officers and one outsider; the new Canadian Industries took over ICI's four directors, two company officers, and the remaining outside director.

Both boards then added members. Du Pont expanded its board by electing two more du Pont men, and ICI added two more company officers and two more outsiders. (Other changes have

been made since.)

Each of the new companies kept a board seat warm for the old company's chairman, George W. Huggett, the



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15th director. During the six months of dickering, Huggett acted as an arbiter. Although he is an Englishman who came from ICI, in the end he joined the du Pont subsidiary as board chairman.

Other officers followed pretty much their old allegiance. ICI man H. Greville Smith, president of the old Canadian Industries, stayed in the same job for the new ICI subsidiary. Sales Vice-Pres. Herbert H. Lank, a du Ponter, became president of the new du Pont. · Down the Line-Service department chiefs were a little harder to split, since they didn't have the same parent-company allegiances as the highest executives. Generally, if one of the new companies got the No. 1 man in a department, the other got No. 2. These two men then sat down and divided their old department between them. Some decisions were made for them: For example, an advertising man who specialized in a product went with the company that took over this product.

Secretaries went with their bosses. Rank-and-file employees weren't given any choice. They were told where they were being reassigned, not asked where they would like to work. Not all employees accepted without grumbling, but most liked the idea of being bigger fish in smaller ponds. Salaries and benefits were carried over, and this discouraged resignations.

• Other Decisions—Some points at issue were settled quite readily. For example, du Pont agreed to let the new ICI subsidiary keep the Canadian Industries trademark, a valuable brand in Canada, but it got a handsome cash award for doing so.

Du Pont also agreed to let Canadian Industries (1954) Ltd. take over the research laboratory, since it has its own facilities in the states.

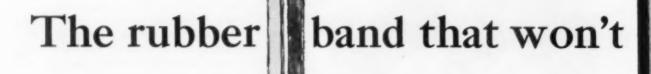
Easiest decision of all: headquarters buildings. There were two, so each company got one.

• Branching Out—Both of the new companies are now broadening into the fields they relinquished in the splitup. The new Canadian Industries is developing a market for its terylene fiber (Dacron in the U.S.) from a \$22-million plant bought from ICI and opened last fall. Du Pont is building an automobile finishes plant and a \$7-million explosives plant.

At Maitland, Ont., du Pont has also started producing Freon refrigerant gases to compete with imports from ICI, and it is designing an Orlon plant to get a firmer grip on the textile fiber market.

Officials of the two companies are as chummy as ever, habitually sit together at the "CIL table" in the Montreal Engineers Club. Presidents Smith and Lank fraternize publicly, name each other to civic committees.







cross section shows why this rubber band can't stretch. A sturdy cord interliner, vulcanized between two layers of tough, flexible synthetic rubber, does the trick. This seamless "sandwich" construction maintains a constant inside belt diameter for years.



Originally created to help spin better yarn, unique material now solves many drive-belt problems

It looks like an ordinary rubber band. Feels like one, too. But there the similarity ends, because this rubber band won't stretch . . . which is one of the big reasons why it's so useful.

Its story starts back in the middle thirties, when Armstrong research chemists began development work on a new kind of apron for the textile industry. (Aprons look much like two-inch-wide rubber bands, but they actually help to control fibers on a yarn-spinning frame.)

stretch

The researchers knew what they wanted in an apron—flexibility, oil resistance, proper frictional "grip," freedom from seams, precise dimensions—all this with absolutely no stretch. But they also knew there was no existing material that combined all these qualities. The problem, then, was to create such a material.

Armstrong chemists felt that synthetic rubber, with its great flexibility and oil resistance, would probably be a good basic material—if they could keep it from stretching. After much experimentation, they found the answer by vulcanizing a sturdy cord interliner between two layers of tough synthetic rubber. The result: a rubber band that didn't stretch. And since the vulcanization literally fused the layers of this "sandwich" together, there were no seams to worry about, either.

The next—and last—step was to make sure that this unusual rubber band had exactly the right frictional grip. This presented a knotty problem because normally synthetic rubber has too much surface friction to serve as an apron . . . it grabs too hard. A controlled reduction of the friction was finally achieved, though, by giving the bands a series of special chemical baths which changed the character of the surface molecules.

These synthetic rubber aprons soon became the standard in the textile field. And as their reputation grew, other applications began to appear. A dictating machine manufacturer, for example, realized that the same qualities which made for good apron performance were just what he had been looking for in a small power transmission belt. And so this very special rubber band—in this case only % of an inch wide—went to work driving an electronic dictating machine.

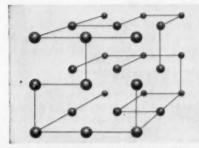
Still another application for these bands was found by a package machinery builder who uses much wider ones as conveyor belts. Right now, these bands are being tested for postage meters, automatic duplicating equipment, and tape recorders. The future? It looks bright for this rubber band that won't stretch.

If you manufacture equipment that uses—or could use—flat belt drives, these non-stretch seamless belts may open the way to lower costs or improved performance. They're available in many different sizes. For suggestions concerning specific applications, write to Armstrong Cork Company, Industrial Division, 8201 Indian Road, Lancaster, Penna.

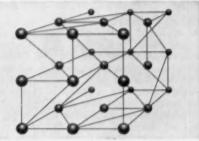
Armstrong Industrial Products

... USED WHEREVER PERFORMANCE COUNTS

ADHESIVES • CORK COMPOSITION • CORK-AND-RUBBER • FELT PAPERS • FRICTION MATERIALS



THE MOLECULES in resilient synthetic rubber are not completely cross-linked. Although the surface is smooth, its coefficient of friction is relatively high—a desirable characteristic for many drive belt applications.



FOR TEXTILE APRONS, a lower coefficient of friction is desired. To get it, Armstrong chemists developed a special chemical bath that oxidizes the rubber, creating a denser surface with considerably lower friction.



Wallace R. Persons (above) president of The Emerson Electric Mfg. Co., joins in cry of many medium size companies against big corporations' power. But his own case history seems to prove that for medium size outfits that want to stay alive, there's . . .

Only One Way to Go

"It's the middle sized firms that are taking the beating . . . the giants in most industries have been able to develop competitive advantages over their smaller rivals . . . hardly a week goes by we don't hear of some merger . . ."

You might think such a jeremiad against big business would have come from a Washington politician. But it didn't. It's the lament of Wallace R. (Buck) Persons (picture) a 45-year-old executive who has been president of The Emerson Electric Mfg. Co. for the past couple of years.

He was laying out to a hometown

audience in St. Louis a problem you hear more and more of these days: How can a medium size business keep going without joining the big firms?

• Lone Fight—The answer apparently is, for some managements, a grim one: Little aid will come from Washington as it often does to small companies; and the big companies don't channel much work your way. So you simply have to fight by yourself. That, anyway, is the answer inherent in Wallace Persons' own case history as head of Emerson.

Ever since 1951, Emerson has been caught in a classic cost-price squeeze.

It isn't alone in its plight. Many medium-sized companies, and especially those in the electrical industry, have been wrung out in the squeeze of competition. You can see graphically how it happens when you examine the profit margins of Emerson, Wagner Electric Corp., and Century Electric Co., all about the same size. While profit margins for major companies in the industry have been relatively stable, this trio was hit hard. In 1947, Emerson's net-to-sales ratio was over 5%, Wagner's was 9%, and Century's was 10%. But from 1952 onwards, this is the picture:

	1952	1953	1954
Emerson	2.7%	2.6%	2.3%
Wagner	4.4%	3.3%	2.3%
Century	4%	3%	2%

Today, Persons thinks his company has edged out of the woods on its own. Emerson's annual report, just announced for its fiscal year from September, 1954, to September, 1955, supports Persons' view of the future. It does show that sales slid \$4-million from 1954 and had sunk to \$40.3-million. But it also shows that the profit ratio is now 3% of sales—the highest it has been since 1951. This year, says Persons, sales ought to top \$50-million.

 No Easy Process—Such a turnabout in Emerson's affairs has not come without a bath of fire—two strikes, a major management overhaul, complete redesigning of products, modernization of manufacturing procedures, and changes in marketing and engineering.

While the changes were being made, Emerson was battling against the effects of sharp price reductions on its major products, its own steadily falling market position, and a drop in two major markets—fans and air conditioners.

The changes—and the bath of fire—began when Persons came to Emerson in December, 1953, as president. He found there a host of problems that had been building up for years. Some were the result of easy-going management policies during World War II; others stemmed from the equally easy-going early postwar days.

• Once a Leader—It hadn't always been that way, though. Emerson Electric dates back 65 years. It sold the first electric fan in the U. S., and for most of its life it had remained a leader in its field. But after World War II, big companies like General Electric and Westinghouse saw the potential in Emerson's market. They started moving fast, building new plants in lowwage areas, and these turned out to be close by Emerson's traditional markets.

Meantime, Emerson's executives were changing fast. In 1947, Stuart Symington (now U. S. Senator) quit as president. His job was filled by an executive of long service. He died suddenly, so



In Taconite processing plant, ANACONDA Interlocked-armor cable is used for feeder line . . . resists weather and industrial hazards.

New cable puts power where you want it-fast!

With ANACONDA Interlocked-armor cable you bring power to new load centers faster—change plant layout quickly, or add new facilities in a hurry!

It is economical—installed fast—indoors or out—with simple supporting devices . . . trained easily around corners, columns and other obstruc-

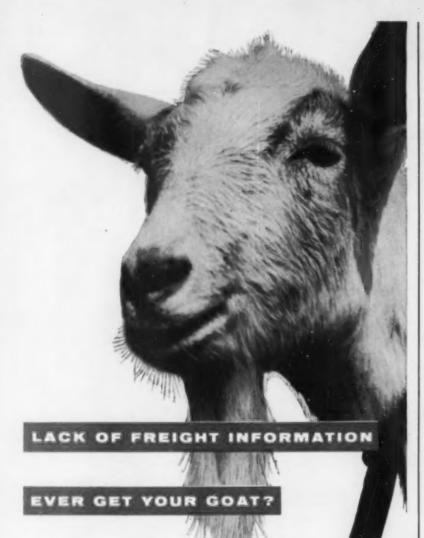
tions in long unbroken runs. Circuits are easy to relocate . . . always accessible. And this cable's interlocked metal-tape armor affords high mechanical protection against all types of damage.

The Man from Anaconda, or your nearest Anaconda distributor, will be happy to give you full information. Or write to: Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

FOR INTERLOCKED-ARMOR CABLE



Anaconda Interlocked-armor cable comes in sizes No. 6 Awg to 750 Mcm-copper or aluminum – up to 15 kv – Underwriters' approval for 600 volts and 5000 volts. Available with rubber-, plastic- or varnished-cambric-type insulation.



You avoid annoyance when you ship carload freight by Baltimore & Ohio Sentinel Service. First: you and your consignee know, by published schedule, precise times of departure and arrival at any private or public facility and at points of interchange. Secondly: the Automatic Records feature of Sentinel Service provides dependable information on unexpected car-interruption, and reforwarding.

You can plan with confidence—and smile, when you ship via Sentinel Service.

Ask our man!





BALTIMORE & OHIO RAILROAD

Constantly doing things-better!

the board chairman, W. S. Snead, had to take over as president.

Swamped, Snead hired Persons from a middle-size company with a fabulous record of keeping itself a leader in its field—Lincoln Electric Co.—where he was sales vice-president.

This is what Persons found:

Wages: According to management, incentive workers were getting 15¢ to 65¢ more an hour than the industry leaders, GE and Westinghouse.

Products: Emerson had a line of over-engineered, under-styled fans and motors that were designed and produced on a job-shop concept.

Materials: Costs were increasing steadily. In 1955 alone, zinc costs for Emerson went up \$16,500; aluminum \$35,000; steel \$274,000; copper, \$556,000.

Prices: The industry was going through sharp price cuts. Small motors, for instance, were chopped as much as 26%. One cut cost Emerson three national customers.

Personnel: A shortage of engineers prevented Emerson from handling the kind of defense work for which it had facilities.

Plant: The company was right in the middle of a high labor-cost area and without the resources to move to low-cost regions.

Persons was thoroughly shaken by his first sight of all these problems. He had been used to the high-pressure, high-pay system of Lincoln Electric. A few days after he moved into the president's office he telephoned the management consultant group of Lester B. Knight & Associates for help.

Then he took a look at the future and came up with this discouraging outlook for the company's 1955 fiscal year: To meet competitors' price cuts would cost about \$1,214,000. (This was equal to Emerson's, total 1954 profits.) To meet higher material costs would chew up an additional \$881,250. So, he pointed out, for Emerson to hold its 1954 position, \$2,005,250 would have to be cut—or made—somehow.

The first immediate moves toward these goals came after the management consultants worked their way through the Emerson plant. Waste and scrap saving was reduced sharply. In 1955, this alone helped save \$972,000.

• Engineering—Product redesign and installation of standardized parts to allow mass production, rather than jobshop lots, also got dramatic results. A floor-mounted air circulator, for instance, was being sold for 69¢ less than it cost to make in 1953. Another price cut took 83¢ more from the sales price. Simultaneously, materials went up 15¢. Today, the product is being made for \$3.55 less than in 1953, and is selling at \$2.03 over cost. Other examples:

· A fan motor that cost \$19.97



OPERATORLESS Elevator Test by Betty Furness Shows Why:

"DOORS WON'T TOUCH YOU With Westinghouse Traffic Sentinel"

1. No more premature door closings

Now passengers in operatorless elevators are completely free from fear of
doors starting to close on them as they
enter or leave the elevator.



(Note cups held against doors by Betty Furness.)

2. Traffic Sentinel's Invisible Beams

"sense" passenger movement, hold
doors motionless until last person is
safely in or out.

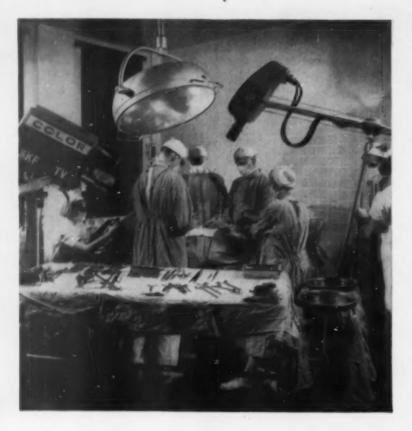
3. Sofe...And Eliminates All Unnecessory Door Open Time — Traffic Sentinel not only inspires new confidence among passengers, but speeds overall elevator service in heavy traffic buildings—holding doors open only as long as required to allow safe, unhurried loading of cars at all floors. It is sensitive when 1 or 20 people use the elevator.

And remember, Westinghouse operatorless Selectomatic elevator systems can cut operating costs up to \$7,000° per cur per year in new or modernized buildings. Call our nearest office for full details.

*includes wages, insurance, training, uniforms (and other costs of attendant operation)

WESTINGHOUSE ELEVATORS

YOU CAN BE SURE ... IF IT'S Westinghouse



Operation Moving Van...

▶ No, the doctors are not operating on a moving van. But an Aero Mayflower moving van has been helping the doctors learn operating technique since 1949 by moving over 20,000 pounds of color television equipment throughout the United States and Canada for closed circuit television programs. Mayflower has been handling this delicate equipment for the pharmaceutical house of Smith, Kline and French of Philadelphia.

Mayflower moves similar fragile shipments safely every day. Your precious household goods, or the goods of your personnel will get the same expert handling, the same gentle care. For the safe, easy way to move long distance, call your local Mayflower agent.

AERO MAYFLOWER TRANSIT COMPANY, INC. - INDIANAPOLIS

Mayflower Service is available through selected warehouse agents throughout the United States and Canada. Your local Mayflower agent is listed under Moving in the classified section of your telephone directory.



America's Finest Long-Distance Moving Service

was redesigned to sell profitably at \$17.
Another motor that cost \$10.80 in 1953 now sells at \$10.70 at a profit.

 A highly competitive fractional horsepower motor that cost \$26.53 to produce is down to \$20.95.

• Labor Battle—In the middle of these sweeping engineering changes wages were going up. Persons' big test came in September, 1954, when the industry pattern raised wages 5¢ an hour. Emerson balked—and took a 10-week strike from the CIO-IUE. This strike was settled without any wage boost for incentive workers—but they did win a profit-sharing plan that would give them 4% of the first \$1.6-million in beforeax profits, and up to 12% of anything over \$3-million.

After this, Persons started what he calls "the big sell." He sought to prove to the union that Emerson couldn't meet industry patterns until it was competitive again. But his "big sell" didn't work. In mid-1955 the union bucked against new shop standards and a seniority plan.

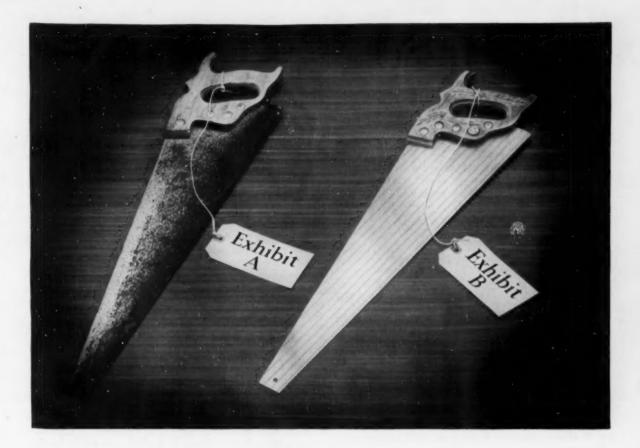
The result: another strike. This time —after two weeks—Persons got something to hang onto—a three-year contract with only one wage reopening (not before April, 1957) and annual wage increases for incentive workers based only on after-tax profits. These range from 1¢ an hour for the first \$1-million to 8¢ at \$3-million.

• Defense Market—Meantime, Persons was girding Emerson to grab larger defense contracts. After the war, Emerson had had some unfortunate experiences with a defense job, and by 1951 its defense orders had fallen to \$7-million. Even in 1955 they were only \$12-million—about 25% of the year's volume. This year, Persons sees that figure shooting to \$20-million—he has put 200 engineers to work on a new contract for nose assemblies for the supersonic F-101B Voodoo all-weather interceptor.

To upgrade his engineering, Persons waged high-powered advertising campaigns—a full page, for instance, in an Akron paper. He sent shop personnel to St. Louis' Washington University for intensive 8-hour-a-day basic engineering training courses. Today he has about 900 engineers, more than twice the number he started with.

Persons hasn't stinted on hiring consultants. But he is counting on internal changes to give the biggest results. He puts heaviest emphasis on Emerson's new Electronics-Avionics Division, and an automation study group.

This year he will also play a hole card: Emerson will make its first move toward low-cost production areas. It is leasing a new building from a community group in Paragould, Ark., 200 miles from St. Louis, in a lower wage area. Production starts there in June for laundry-equipment motors.



The case of the rust-free saw

Saws made of new Armco Stainless stay bright...stay sharp!

Both of these saws were left on the ground for 30 days, exposed to heavy dew and rain. Exhibit A is badly rusted. Exhibit B is bright as new. Why the difference?

The saw on the right is made of a new Armco Stainless Steel. This special steel, known as 17-7 PH Stainless, is strong and flexible, and it resists rust. Besides keeping its bright finish, it takes a sharp edge and holds it . . . cuts as smoothly as any handsaw you have ever used.

This new stainless—one of many special steels made by Armco—can add value and sales appeal to many products. If you are looking for a metal that is exceptionally hard and tough, highly heat and rust resistant, Armco 17-7 PH may be the answer. Why not write us today about your products and see.



Because Armco 17-7 PH Stainless Steel stays strong at high temperatures, this "wonder metal" is used in supersonic aircraft and missiles. Is this property important in any product you make or sell?

ARMCO STEEL CORPORATION

MIDDLETOWN, OHIO



In Management

General Tire Eyes New Member For Its Growing Family

"Win your proxy fight and we'll merge you into the General Tire family." That, in effect, is what General Tire & Rubber Co., Akron, last week told the management of A. M. Byers Co., Pittsburgh wrought iron producers.

Insurgent stockholders have been battling for more than a year for control of Byers, which took losses in 1954 and 1955. Byers' management hopes to win out at a showdown annual meeting Jan. 26, when it wields the collective power of about 30% of voting stock held by the Byers family, by other directors, and by General Tire.

To help, General Tire has:

• Committed itself to buy 60,000 shares of Byers common that the Byers family has picked up from op-

position groups.

 Taken options on a further 27,300 commons and 5,139 voting preferreds that are held by the Byers family.

 Put up its latest suggestion of a merger with Byers if the present management wins at the Jan. 26 meeting.

Reason for this backing: General, expanding its output of plastic pipe, sees Byers as an ideal sales outlet.

General got into the plastic pipe business when it bought Bolta Corp., Lawrence (Mass.) in April, 1954. It has since opened up a resin plant—the raw material for plastic pipe—in Ashtabula, Ohio, and is anxious to push plastic products. Byers, the country's principal wrought iron pipe maker, has an excellent name, plus the sales staff and the contracts to push General's plastic pipe.

Monsanto Speeds Suburban Move And It Should Be Popular

Excavation has started for Monsanto Chemical Co.'s new "campus-like" suburban headquarters, outside St. Louis. Five buildings, only two or three stories high, will be erected on a 255-acre tract 15 miles west of Monsanto's downtown St. Louis plant and office location.

The company actually started work on a suburban headquarters two years ago, but it dropped the work soon after and used the funds for other purposes. St. Louis' civic progress groups have since been trying to persuade Monsanto to stay downtown, but now the company's move is on in earnest.

Monsanto officials cite these reasons for their decision:

• The company surveyed its employees in 1951, found their center of population was near the city's western limits. Meanwhile, the flight to the suburbs has not

ern limits. Meanwhile, the flight to the suburbs has not diminished. So it will be easier for the office staff to get to and from work at the new suburban headquarters.

· Ground at Monsanto's South 2nd. St. location is

far more valuable as manufacturing space than as office space. Real estate prices are going up and Monsanto, which has more than tripled sales since 1945, wants to use for manufacturing every inch of its land holdings that are suitable for plants.

Chances are that companies like Monsanto moving into the suburbs will find their employees pleased. Last month, County Trust Co., White Plains, N. Y., discovered this was so after it surveyed 700 junior and middle management people whose companies have shifted their operations to Westchester County.

Some 83% who, in the last six years, have moved their homes to Westchester to be close to their offices, said they'd do it again. Of course, there were some complaints. Chief of these concerned the high cost of housing and taxes. Most complaints came from those who had transferred their homes from outside the New York metropolitan area. Ex-Manhattanites had relatively few gripes.

Nunda, N. Y. Gets Reprieve

From Corporate Death

Blaw-Knox Co., of Pittsburgh, and Winsmith, Inc., of Springville, N. Y., last week told the people of the upstate New York town of Nunda (BW-Feb.26'55, p110) that they no longer faced a ghost town future.

The deal that assured Nunda's continued life: Blaw-Knox has sold its Nunda plant to Winsmith. This makes good Blaw-Knox's efforts to find an industry to replace the paving equipment business that it ran as Nunda's sole industry. Blaw-Knox has just moved this part of its business to a new plant at Mattoon, Ill. Now Winsmith will begin production of speed reducing gears to Nunda.

Blaw-Knox offered the plant at a bargain price so that Winsmith could begin hiring and start production as soon as possible. Winsmith's Pres. James F. Murray predicted that full production, and employment of between 100 and 150 workers—about the same number as Blaw-Knox employed—would be achieved within two months.

Winsmith will call this subsidiary operation Buffalo Assets Corp.

Management Briefs

Rich diet: Warner-Lambert Pharmaceutical Co., Inc., plans an exchange of stock deal to take over Emerson Drug Co., Baltimore, makers of Bromo-Seltzer. Shareholders of both companies will vote on the purchase in March.

Eying consumer market, Kaiser Aluminum & Chemical Corp. has decided to start making aluminum containers. This week, it purchased Foil Kraft, Inc., Los Angeles, fabricator of sheet and foil containers for frozen foods.

Richfield Oil Corp. is seeking U.S. Supreme Court review of a lower court decision obliging Richfield to bargain with labor over its stock option plan (BW—Oct. 23°54,p162). Management objects, arguing that this puts the union on both sides of the bargaining table—as owners and as labor.



Again in 1955

the word for COMBUSTION was GROWTH

Since 1950, Combustion has increased its productive capacity by more than 50 per cent. This has involved expansion of all five of its domestic manufacturing divisions as well as its Canadian division. It does not, however, include the new nuclear facilities and mechanized foundry referred to in the caption of the picture. These were 1955 projects which are now either in operation or well along toward completion.

NEW NUCLEAR FACILITIES

In addition to the new facilities depicted above, Combustion is currently building a Nuclear Engineering and Development Center on a 500-acre tract recently acquired at Windsor, Connecticut. This center will comprise an Administration Building, Critical Facility, Chemical and Metallurgical Laboratories and buildings equipped for the fabrication and assembly of atomic fuel elements. When this program is accomplished about a year from now, Combustion will have the exceptional advantage of being

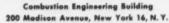
equipped with the personnel and facilities to design and manufacture complete nuclear reactor systems.

NEW MECHANIZED FOUNDRY

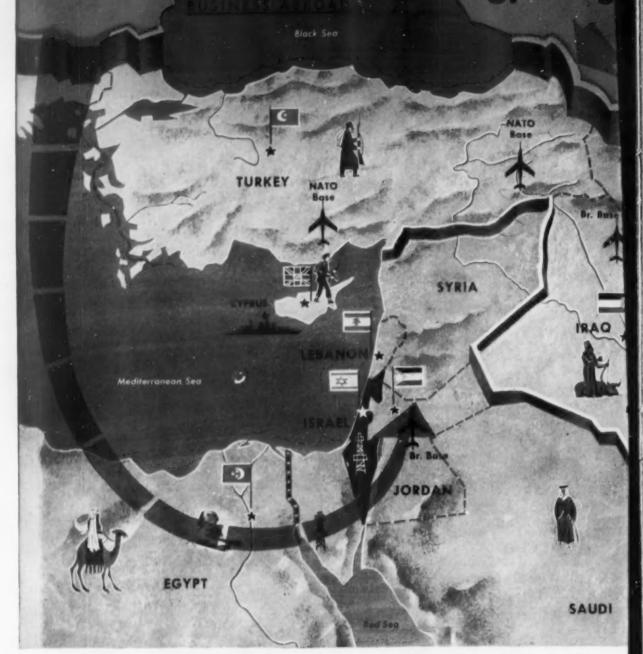
This will be the world's first completely mechanized foundry for the production of soil pipe and fittings. It will assure reduced production costs and higher quality in a product which has already received wide acceptance in the building industry under the trade name "Superspun."

A corporate philosophy that emphasizes growth and the most modern facilities—like those described here—is one of the many reasons why boilers and related equipment bearing the Combustion nameplate are found all over the world. Whether your steam requirements are large or small, and whether your fuel be conventional or nuclear, you can look to Combustion for equipment of advanced design, built to the highest manufacturing standards.

COMBUSTION ENGINEERING







The Middle East: Reds Exploit

The explosive forces of nationalism are threatening to produce a power vacuum in the Middle East—a region that contains half the free world's oil reserves, has historically been the strategic bridge between Europe and Asia, and is now a potential Communist gateway to Africa.

British power, which long dominated the region, has declined to the point where Western control could be broken. Already the Communists are moving into position, anxious to fill the vacuum just as they did in China at the close of World War II.

More is at stake in the Middle East than Western access, via Suez, to the shortest sea routes to the Far East, than our strategic airbases in the area, than Western oil revenues. If the region ever came under Soviet control, or became submerged in chaos, Western Europe would be knocked off its feet economically. For Britain, it would be an economic catastrophe.

• Blow to Industry—Without Middle Eastern oil, British and Continental industry would slow down drastically. The British and West Germans already are so short of energy fuels that they must spend close to \$500-million a year on coal imports, mostly from the U.S. With the Middle East knocked out, Britain's overseas payments would swing well over \$1-billion into the red just from the change in the oil ledger.



Power Vacuum

This undoubtedly explains why Moscow has moved into the Middle East. It also explains why U. S. and British experts on the Middle East now are working around the clock in Washington to clear the ground for the upcoming conference between Pres. Eisenhower and Prime Minister Eden. Eisenhower and Eden know that they must find some way to stop the crosion of Western influence in the Middle East. They realize that the situation

there is made to order for Moscow-that the Arab-Israel struggle, the conflicting ambitions among the Arab countries, popular resentment of West-ern control over oil, and the spread of an anti-feudal revolution give the Kremlin plenty of room for maneuver.

• Evidence—Two events toward the close of 1955 prove how serious things have become in the Middle East. At the end of September Premier Nasser of Egypt exploded the news that he



Faster getaway for Greyhound

When Greyhound buses need fresh horsepower, Bassick "S99" casters roll to the rescue. These economical heavyduty steel casters equip the mobile mounting device (above) which slides under the rear of the bus and rolls away the engine for repairs.

A fresh engine from stock is guided back into position the same way, connected in place—and the Greyhound is ready to continue its trip.

"S99" GIVES BEST SUPPORTING PERFORMANCE

Bassick's 8" series "S99" caster has a 2½-inch tread wheel that will carry 1500 pounds (and more) safely and economically—the reason it was picked to handle the heavy Greyhound engine. Doubleball race design permits easy swivelling, and grease retainer cup prevents loss of lubrication, assures longer life.

For lighter loads, Bassick's "H99" medium-heavy-duty casters offer the same basic features and construction.

3-D CASTER CAN'T DRIP GREASE

Bassick's new "3-D" caster stops the triple threat of lost lubrication with new sealed bearings. There's no danger to bearings, no hazardous floors, no lost maintenance time. Bassick distributors have them in stock. THE BASSICK COMPANY, Bridgeport 2,

Conn. In Canada: Belleville, Ont.







SW

Only STEEL can do so many

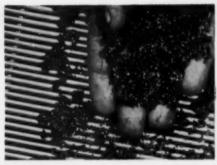
Let it \$800. This eye-popping "Sno-Freighter," built by one of our customers for Alaska Freight Lines, Inc., operates in Alaska—over snow, ice and bull-dozed trails. Each wheel in the 6-unit train is driven with its own electric motor. The 7-foot-high tubeless tires are 38 inches wide at the base, and the Sno-Freighter can wade through 6-foot-deep water without damage. USS steels played an important part in this amazing machine, including USS Shelby Seamless Tubing for the vital car coupling system.



jobs so well



Beautiful—And Safe. This handsome boat is possibly the safest pleasure boat ever made. With welded construction, gasoline and bilge areas can be completely separated, eliminating the most common cause of boat disasters: fire. The boat is made from USS Cor. Ten Steel, which is much stronger and more resistant to corrosion than carbon steel.



Coal Latindry. Did you know that most coal is thoroughly washed before it is used? After washing, it is de-watered by passing it over Stainless Steel screens like the one shown here. The Stainless is smooth, and it outlasts ordinary steel three or four times.



Slit It Yourself. In this customer's plant, USS Galvanized Steel Sheets are being slit into strips, which in turn will be formed into moulding channels. The galvanizing won't flake off, despite the extreme deformation.

UNITED STATES STEEL

For further information on any product mentioned in this advertisement, write United States Steel, 525 William Penn Place, Pittsburgh, Pa.

AMERICAN BRIDGE...AMERICAN STEEL & WIRE and CYCLONE FENCE...COLUMBIA-GENEVA STEEL...CONSOLIDATED WESTERN STEEL...GERRARD STEEL STRAPPING...NATIONAL TUBE
OIL WELL SUPPLY...TENNESSEE COAL & IRON...UNITED STATES STEEL PRODUCTS...UNITED STATES STEEL SUPPLY...DIVIDION JUNITED STATES STEEL CORPORATION, PITTSBURGH
UNITED STATES STEEL HOMES, INC. - UNION SUPPLY COMPANY - UNITED STATES STEEL EXPORT COMPANY - UNIVERSAL ATLAS CEMENT COMPANY

4-09





Air Conditioning

Serves American National Insurance Co., Galveston

These handsome buildings house a staff of over 1000 people for American National, which was organized in 1905 and now has in force more than three billion dollars of insurance.

Both buildings were recently air conditioned completely by Decker and Roberts,

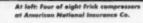
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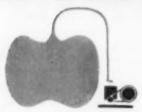
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Company_ .City & State. had made an arms deal with the Kremlin. In December anti-Western riots in Jordan forced the resignation of a pro-British government that planned to take Jordan into METOthe "northern tier" alliance of Turkey, Iraq, Iran, Pakistan, and Britain.

The situation has now become so ticklish that the key decisions made by Eisenhower and Eden will be kept under wraps. Their decisions will involve plans for behind-the-scenes use of diplomatic, military, and economic pressures on all contending parties-decisions that would lose their effect if made public.

· Safe Bets-But it's not hard to guess that the Eisenhower-Eden decisions will include the following:

· Reinforcement of British military positions. British controlled bases in Jordan, Iraq, and the Persian Gulf already are being beefed up. So are British reserves on Cyprus.

· Joint U.S.-British pressure to get an Arab-Israel settlement-at least a "coxistence" agreement.

· More economic aid for the Arab countries, including financial help for Egypt's Aswan High Dam. However, a big regional development program, such as London talks of, is out of the question for now.

Such a program adds up to a holding operation rather than a bold new initiative. Whether it will be enough remains to be seen. The British undoubtedly want a more dramatic show of strength, both military and eco-

There are two landmarks in the postwar decline of British power in the Middle East: (1) the end of British mandate rule in Palestine in 1948 and its replacement by a dynamic Israeli state; and (2) the anti-feudal revolution that overthrew the Egyptian monarchy in 1952

· Advent of Israel-From the end of World War I until these two events, Britain had been able to balance a variety of chaotic and conflicting social and political pressures from its Palestine mandate, its Suez base, its indirect rule in Iraq, and the gradual creation of a British controlled state in Transjordania. The emergence of Israel changed all this. It electrified all the Arab states, unified them on at least one thing-their hostility to Israel and their bitterness toward the U.S. and Britain for supporting their enemy.

Border incidents during the past year, one on the Egyptian-Israeli frontier and another on the Syrian border, have made Arab feeling even stronger. Whatever the merits of the Arab-Israeli conflict, it is clear that as long as the Arab countries regard Israel as more dangerous than Communism, there is no chance of integrating them into a Western defense system. It even looks as if it may have been a mistake for London and Washington to get Iraq into METO, since the move aroused so much hostility in the other Arab

· Anti-Feudal-The Egyptian revolution, though still far from complete, is having an effect that may prove even more far reaching than the creation of Israel. It is undermining the feudal pattern in the rest of the Middle East-the thing on which British control rested. An awakened middle and professional class is beginning to wonder about the advantage of being ruled by kings, sultans, pashas, sheiks, and kaids. More and more, the feudal rulers must listen to the voice of this class, which is quite ready to call out the mob in its support.

It was this class, supported by the Communist Tudeh party, that put Mossadegh in power in Iran, backed his oil expropriation policy, and almost succeeded in overthrowing the Iranian monarchy. In Jordan the same classwith encouragement from Egypt, help from Soviet agents, and financial support from Saudi Arabia-has just put an end to British hopes of drawing Jordan

into METO. This class may have different local goals from country to country but it has at least three in common: (1) an ambition to establish national governments that will serve its interests; (2) a burning desire to get rid of Western political controls; (3) a growing resentment of Western control over the region's vast oil resources.

• Royal Feud-The pressures from this class are especially dangerous when they are fed by the feuds of Middle Eastern potentates. Take the feud between the Saudi Arabian royal family and the Hashemites, who rule in Jordan and Iraq. A generation ago the Saudi dynasty drove the Hashemites out of Mecca and Medina. And now it would like to drive them off their Iordanian and Iraqi thrones.

What's more, the Saudi dynasty is using its lush oil royalties, which come from an American company, not only against the Hashemites but against British influence in Jordan and Iraq. Recently, it seems, the Saudi king joined with Nasser in offering Jordan a 10-year loan of about \$280-million to make it "independent" or about what it could expect from Britain over the same period.

Or take the report that one of the Middle East oil producing countries is trying to use its oil as a lever to force France out of North Africa-by asking the Western oil companies with concessions in its territory not to ship any of

this oil to France.

• Regional Aid-There was a time when some U.S. officials felt that a part of the oil income received by Middle East governments, which totals about \$800-million a year if you count pipeline royalties, could be used to finance a regional development program in an area where poverty stares you in the face. They felt that this might be done through a regional development bank, which would get its funds from the oil producing countries but loan money out to countries that lack oil resources.

This may have been wishful thinking all along. Certainly there is no prospect of it today, with the Arab world split

into two camps.

Egypt, one of the oil have-nots, can count on U.S. financial help-assuming Nasser decides to (1) let the West, rather than Russia, build the Aswan High Dam; and (2) not take any more Communist arms.

· Key Figure-The fact is that Nasser, more than any other Middle East leader, holds the future of the area in his hands. His moves are sure to make a big difference in how British-U.S. policy develops over the next year or two. He now has Syria, Saudi Arabia, and Lebanon lined up in a military alliance against Israel. (Lebanon joined right after the British fiasco in Jordan.)

Washington and London are quite prepared today to have Nasser play the role of a neutral in the bigger East-West conflict, and they don't expect him to forget his hostility to Israel. But they will look for any signs that he is (1) playing the Soviet game or (2) has any aims to liquidate Israel.

As for the first, there is plenty of evidence that Nasser got the inspiration for his Soviet arms deal during the Afro-Asian Conference at Bandung, Indonesia, last spring. The idea for this deal apparently came from Red China's Premier, Chou En-lai. Nasser is due to visit Moscow and the satellite capitals this spring. If he lines himself up openly with the Soviet bloc on major East-West issues, or agrees to have the Egyptian army permanently equipped with Soviet arms, then you could expect an end of U.S.-Egyptian cooperation as long as he remained Egypt's

• The Truce-As for Israel, the West has proved, by backing last week's U. N. resolution against Israel, that it is ready to defend the truce against Israel as well as against the Arab countries. So Washington and London expect Nasser

to act accordingly

Thus, U.S.-British policy is based, for the time being, on the assumption that Nasser's real goal is to build up his own country and make it, as a modern state, the leader of the Middle East. If that should prove to be a mistaken assumption, then the U.S. will face the choice of controlling the Middle East by force, as Britain used to do, or of seeing this region fall under Communist control. END

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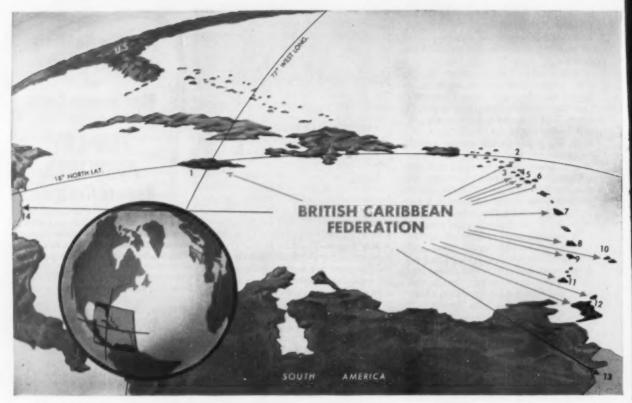
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New British Dominion Coming

The U.S. may soon be flanked by British Dominion on the south as well as on the north. A conference will meet Feb. 9 in London aiming at the creation of a self-governing West Indian federation to be called the British Caribbean Federation (map).

West Indian leaders see the London meeting as a sure sign that federation is in the home stretch. They expect that a federal government will be set up by 1957 at the latest, with the even more alluring goal of dominion status

to follow before 1960.

· Realities-The political and economic realities behind federation are simple. Individually, the islands-most of them were discovered by Columbus, several had been settled by the British by 1655 -are specks, not merely in the seas, but in terms of economic strength. The whole group has only 3-million people, yet most of the islands are overpopulated. About half their trade-exports and imports-is with Britain. They depend almost entirely on Britain, the U.S., and Canada for capital to develop their mineral resources and to build up light industry.

Historically the islands have lived on a sugar-rum-molasses economy. More recently, oil and asphalt have given Trinidad another economic dimension. Today bauxite is doing the same for

Jamaica. And Jamaica is taking a leaf out of Puerto Rico's book in the way it is luring light industry-and tourists. Still, hardly any of the islands can support the bursting growth of population that has come with modern hygiene and medicine.

· Toward Freedom-West Indian politicians have been dreaming of federation for 10 years, seeing it as the shortest route to real political independence within the British Commonwealth. The idea has also rallied those who feel that only through a central voice can the islands achieve economic independence. Today, there are West Indian trade commissions in London and Ottawa, but these cannot negotiate the joint trade pacts that would be possible under federation.

The islands are already linked informally by their common heritage, and the Church of England. Six years ago a new link was added-Jamaica's University College of the West Indies, which has 400 students and awards University of London degrees. This university stands today as a symbol of federation. It provides a first class university and medical college for West Indians, who in the past have had to go out of the islands-often in the face of color bars-to get advance training.

· Status-West Indians see in federa-

tion more than economic advantage and cultural unity. There is the matter of status. A Barbadian or Jamaican is proud of his own island. Yet he would like to be known as a West Indian, a member of a federation of 3-million. And status takes on more glamor when the islander dreams of independence and of a day when he will have an ambassador in Washington and a delegate to the United Nations

In addition, West Indian leaders think that with federation they can maintain British law and political stability in an area long known for homegrown dictatorships and bloody revo-

lutions.

Federation has been coming fast. The first formal meeting on the subjectthe Montego Bay Conference-was held as recently as 1947. Since then, there have been other conferences and mountainous piles of reports. The principle of federation has been approved by the legislatures of all but two of the British possessions. The exceptions are the two mainland governments, British Hon-duras and British Guiana.

· Flexibility-Present plans call for the federal government to be small and flexible. Among its earliest responsibilities will be currency, customs, and defense, along with a federal judiciary, civil service, and postal service. It will

Proposed Representation in Federal House of Representatives

TOBAGO	10	**
TRINIDAD &		
GRENADA	2	
BARBADOS	5	
ST VINCENT	2	**
ST LUCIA	2	**
DOMINICA	2	**
ANTIGUA	2	**
MONTSERRAT	1	**
ST. KITTS NEVIS	2 Se	ats
ANGUILLA		
JAMAICA	17 Se	ats
	ANGUILLA ST. KITTS NEVIS MONTSERRAT ANTIGUA DOMINICA ST LUCIA ST VINCENT BARBADOS GRENADA TRINIDAD &	ANGUILLA ST. KITTS NEVIS 2 Services 1 ANTIGUA 2 DOMINICA 2 ST LUCIA 2 ST VINCENT 2 BARBADOS 5 GRENADA 2 TRINIDAD &

13 BR. GUIANA

in doubt

14 BR. HONDURAS

in doubt

West Indies

have only such powers as are specifically made over to it, as was the case in the American and Australian constitutions.

Its parliament will have an elective 45-member House of Representatives, its major legislative body, and a 19-member Senate. The government will be headed by a Prime Minister and a 14-member Council of State. Britain's will be represented by a Governor General, who initially will be clothed with reserve powers over certain legislation.

The area will continue to receive sizable financial assistance from London. But it is proposed that the money go to the federal government, and not to the individual islands as it does today.

 Pitfalls—Federation has its problems just as it did in the early days of the U.S. There is the same sort of pulling and hauling between the islands as there was between the 13 American colonies.

Finance has been a problem. The islands are poor; in fact some keep their heads above water only through grants in aid from Britain. Originally, the idea was to use part of the islands customs receipts to pay the cost of the federal government. But a special fiscal commission has recommended instead that the cost of government be met by



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SIR HUGH FOOT is odds-on shot to be federation's first Governor General.

federal taxation—a proposal that isn't too popular with some of the islands.

It has been hard to get agreement on freedom of movement within the federation. Inhabitants of such overpopulated islands as Barbados want to move to the underpopulated areas like British Guiana (437,000 people spread over 83,000 square miles) or British Honduras, or Trinidad. But these three have had restrictive policies, aimed at keeping immigrants out unless they had certain occupational skills. Not till recently was any headway made on this.

• Oversize—Then there has been the

problem of how to prevent a big and relatively populous island like Jamaica (it has more than half the federation's total population) from swamping the federal legislature. This has been met by Jamaica's agreeing to take only 17 of the 45 seats in the House of Representatives. And Jamaica has laid



NORMAN MANLEY, Jamaica's top minister, is likely to be federal Prime Minister,

no claims to the federal capital, which is likely to go to Grenada, with Trinidad a long-shot possibility.

When it comes to political leadership, though, Jamaica is sure to swing its weight—not because of its numbers but because it has two political figures who seem shoo-ins for the top posts in the new government. Sir Hugh Foot, Jamaica's governor since 1951 and the most popular in the island's history, seems well ahead of the field as a candidate for Governor General. One recent sign in this direction is that the colonial office recently extended his five-year appointment as governor by two additional years.

Jamaica's chief minister, Norman Manley, who swept into power last year with his Peoples National Party, is considered the likeliest candidate for federation Prime Minister. Manley, a Rhodes scholar, has built a reputation



SYMBOL OF FEDERATION. The six-year-old university College of the West Indies draws students from all the British Caribbean possessions, helps foster unity.



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The new product was pioneered under a National Distillers research fellowship at the University of Cincinnati and further developed and tested in the company's Research Center. In pilot plant production for the past 18 months, it has already been evaluated by many potential users.

The first commercial plant in the world to produce this new material is now being built by U.S.I. at Tuscola, Ill. Initial capacity will be 10 million pounds a year. Pilot plant

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resins for paints and enamels; reinforced plastics used in auto bodies, boats and wall partitions; foam plastics; and a new type of synthetic rubber which may make the "100,000 mile" tire a reality.

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among the islanders as a shrewd diplomat and brilliant lawyer. Though a greenhorn at regional politics, Manley won his spurs recently by helping work out a compromise on the ticklish immigration problem at a recent conference of islands interested in federation. The only others considered in the running against Manley are Trinidad's Albert Gomes and Premier Brantley Adams of Barbados.

• Sitting It Out—The opposition of British Honduras and British Guiana to federation will probably be the most serious problem at next month's meeting in London. Together the two mainland units contain 91,867 square miles and only 525,771 people. The rest of the islands together have 2,740,000 inhabitants in only 8,077 square miles. Most West Indian leaders feel that the two mainland countries must come into the federation if it is to be a success.

British Guiana's opposition to federation stems from several sources. Its Communist element, headed by Cheddi Jagan, wants no part of federation. Then there is an element of East Indians, who look more to India than to the rest of the British West Indies. This has shown up in the spurt of Hindi teaching and the appearance of saris and "Nehru" suits. In British Guiana as well as Trinidad, the East Indian element is powerful in business law, and politics. However, the Guiana legislature voted several months ago to reexamine the federation question.

Other elements in British Guiana are opposed to federation because they feel their representation in the federation's House of Representatives would not be in keeping with the colony's wealth, mainly in bauxite, timber, and sugar.

There is also the worry on the part of many West Indies political leaders that achieving federation in so short a span of time has political dangers. One problem posed is that the less politically advanced islands may be a drag on the fully constitutional islands. There is also suspicion in some quarters of the haste of the British Colonial Office to make federation a reality.

British Honduras has been hanging back largely because of the immigration issue. There is little chance it will be an original member of the federation. · Distances-There are other problems for the federation-in-the-making. Distances between the islands are great and there are difficulties of transportation. Even today only one ship, the West Indian, touches all the islands; air travel is expensive. Legislating for such an area is going to be difficult and expensive, communication between officials will be slow and infrequent. As one politician puts it: "We face the problem of trying to federate an ocean."



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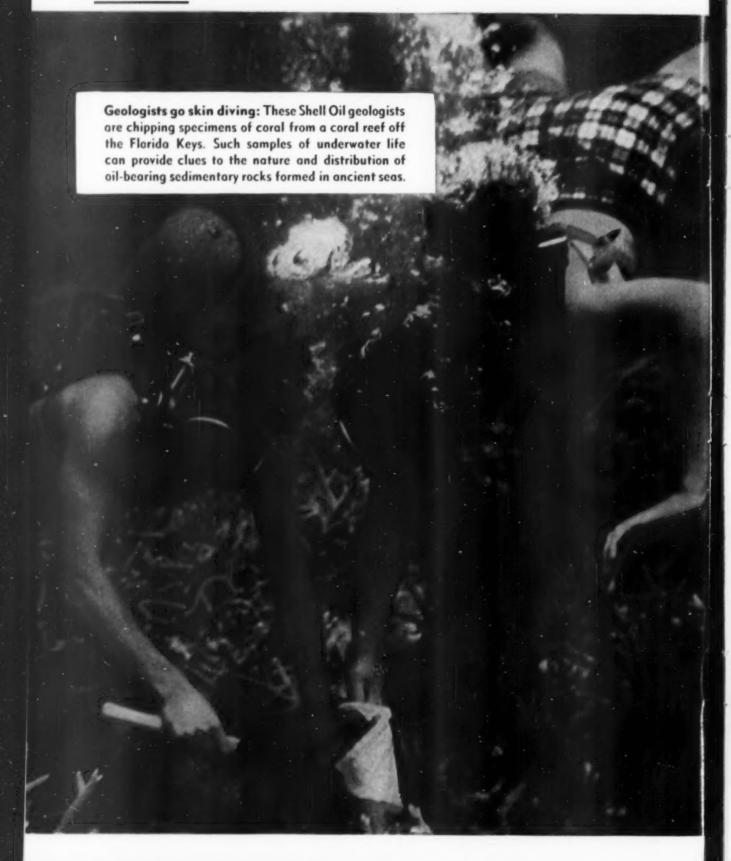
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Skin Divers Hunt Clue To Hard-to-Find Oil

The skin divers pictured on these pages are not in the water for the kicks. They are highly trained research geologists in the employ of an oil company.

By chipping off specimens of coral and studying the formation and making other underwater observations, they hope to fill in a sketchy area of geological knowledge—and unlock the mystery of where oil lies hidden.

Actually, there's no real doubt in anyone's mind that most future oil drilling locations will continue to be spotted by much the same geological and geophysical methods as are used

Most of today's oil fields are what geologists call structural traps—substructure closures formed by subterranean folding and pinching off of rock layers. There are fairly well known methods of spotting areas where these are likely to be found.

 Hard-to-Find Deposits—But there's another, radically different type of oil deposit responsible for some of the world's biggest strikes too. Known technically as stratigraphic traps, these deposits are sandstone bars or limestone reefs that were formed in ancient seas by the gradual deposit of millions of vears of sediment.

These reefs and bars (porous rocks, surrounded by non-porous rocks) are almost impossible to find by conventional exploration methods. Oilmen them-

selves admit that when a stratigraphic oil strike occurs, it's a matter of sheer luck-not skill.

• Basic Reasoning—But skin-diving geologists think they can lick this problem with underwater research on sedimentation. If they can learn why muds are deposited in one area, while sands, limestone, and other types of sediment are deposited elsewhere, they believe they will be able to locate stratigraphic traps more easily.

And there's one obvious way to study sediments and sedimentation—go down on the floor of the ocean where the process goes on today.

Already, underwater researchers have learned to associate certain types of organisms with particular types of sediments. Certain small fish and tiny sea urchins inevitably are found near particular types of coral reef formations.

It is doubtful that study of this type ever will directly help an exploration geologist to decide whether a particular lease should be purchased, but some day it could be a step in formulating the science that guides his reasoning.

the first man to suggest that oil exploration techniques might be extended by studying sedimentary processes is Great Britain's I. V. Illing. Son of a well known British consulting geologist and backed by British Bahaman Oil Development money, Illing made some



DIVER hits water head first and backwards so his body will push air tank downward.

limited sedimentation studies of the Ragged Island Cays in the Bahamas back in 1948.

Excited by his findings, several U.S. oil companies quickly decided to extend the work with grants-in-aid to universities doing sedimentary research.

But it soon became apparent that this type of investigation wasn't adequate. Limited by a lack of time and equipment, researchers were forced to make spot checks rather than definitive studies. Neither the companies nor the universities were set up to process the







CORAL FORMATIONS may be key to locating stratigraphic oil deposits. Types shown here are porous, moose horn, and brain coral.







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PUBLISHING COMPANY, Inc. Room 2710, 330 West 42nd St. New York 36, N. Y. underwater samples obtained properly—determining faunal, chemical, and mineralogical properties. And there was never time to correlate their findings into a map showing distribution of bottom sediments over an entire area.

Socony Expedition—This was the situation in January, 1952, when Socony-Vacuum Co. (and its subsidiary, Magnolia Petroleum Co.) started underwater sedimentary expeditions in earnest.

For the first 18 months, Socony's efforts were pretty simple. Trailing along after the company's Geophysical Dept. (then doing offshore seismic studies in the Gulf of Mexico), Socony geologists collected bottom samples at each geophysical station. (Stations were 1,000 ft. apart along lines 10,000-20,000 ft. apart.)

Gathering 6,000-7,000 samples, the geologists then returned to the laboratory to attempt to correlate their results.

But it became evident that mere dredging and coring operations would not be enough to solve the mystery of sedimentation. Divers must explore the bottom themselves.

· New Start-So Socony whipped together a team of four geologists and two geological technicians, and chartered an old shrimp boat for the purpose of ranging in water up to 65 ft. in depth-as far as 45 miles off the Texas coastline. Flourishing dandelion diggers to loosen specimens from the sand and coral, the sea-searching geologists (all experienced divers) were dropped over the side at specifically chosen locations. Carrying watertight cameras, wax pencils, plastic slates, and current meters, they have been able to increase substantially the growing fund of knowledge about particular types of sedimentation.

Shell's Survey—So far, Socony's underwater research has been confined to expeditions in the Gulf of Mexico, however. Biggest factor in sedimentary research today is Shell Development Co.'s Exploration and Production Technical Services Div., which is conducting a systematic survey of the entire Bahama underwater area.

Masterminding Shell exploration activities is Dr. R. N. Ginsberg-an expert with three years' experience studying reef formations at the Marine Laboratory of the University of Miami. Aiding him on the Shell project are two other geologists-R. M. Lloyd and K. W. Stockman.

At present, samples from last summer's expedition are being studied at a permanent laboratory set up at Coral Gables, Fla. But when this sea harvest is completely evaluated, Shell skin divers will resume underwater operations in the hope of turning up samples of coral and limestone deposits that, when matched with deep sedimentary

rock, will point to some similarity of deposition.

 How the Divers Work—Adopting, in large measure, techniques developed by frogmen during World War II, the Shell skin divers have gradually worked out a system of underwater researching that is both fruitful and practicable.

Garbed in swim trunks, a face mask and fish-like fins, each skin diver carries his own aqualung strapped to his back.

The aqualung's air supply will last for 50 min., but divers seldom stay down that long because the underwater work is so exhausting. Each man also carries his own tools—hammers and picks with which he can chip off specimens of particular underwater deposits.

At 20 ft. below the water's surface the water is clear and the sunlight is so intensive that most divers are forced to apply a cream to prevent sunburn.

Near-Sightedness a Boon—Other phenomena below the surface have conditioned procedures, too. Geologists troubled by near-sightedness, for example, can cast aside their glasses when skindiving. Reason: They can see better on the ocean floor than people with normal vision because of the way light is refracted underwater. And, of course, the exacting art of breathing through a 60-lb. aqualung is tricky to learn, making it necessary for divers to proceed slowly and cautiously.

But, despite the risks, skin diving geologists are completely sold on the validity of their unorthodox method of sedimentary research.

RESEARCH BRIEFS

Growing patch skin graft experiments, aimed at saving the thousands of lives now lost annually as a result of burns, will be conducted at the Department of Plastic Surgery, Duke University of Medicine, this spring. Under a grant from Playtex Park Research Institute, a non-profit foundation devoted to the support of pediatric research, the experiments will mark the first recorded attempt to reproduce a patient's whole skin—both epidermis (outer layer) and derma (true skin) in the laboratory.

Finding out why mortar shrinks and develops defects in concrete block walls is a problem University of Toledo's Research Foundation is tackling. National Concrete Masonry Assn. feels that if the study comes up with any bright suggestions, it could mean greater use of concrete blocks. About 2-billion blocks are used annually in the U.S., but this could be increased substantially if block structure and the mortar that holds the blocks together were stronger.



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Rockwell Report



by W. F. ROCKWELL, JR.

President

Rockwell Manufacturing Company

Enjoying the advantages of a decentralized multi-plant operation is, to a great extent, dependent on how well you solve the problems growing out of or made more complex by such an organization.

One of these is Industrial Relations. How do you divide responsibility and authority between the headquarters Industrial Relations staff and the General Managers responsible for the profitable operation of each individual plant? No two companies can give exactly the same answer to that question.

In our own case, the headquarters Industrial Relations department is essentially a policy making and a service organization, not a police force. Its first function is to develop workable procedures for reaching our industrial relations objective: providing the most productive work force possible—at a price fair both to workers and the company. This involves techniques for recruiting, selecting, training, job evaluation, etc.

Its second function is to train each plant manager and his staff in the application of these procedures so there is uniformity of intent and practice from plant to plant.

Over and above establishing the ground rules and keeping them up to date, the Industrial Relations staff is ready to advise and help in any way desired or needed. But each General Manager is largely on his own in applying the ground rules to his local situation.

Handling of industrial relations at the plant level is made more effective by another aspect of our organization. Most of our plant organizations are relatively small and compact. This makes it easy for each General Manager to know and understand his workers, and for them to know him as a man genuinely interested in their welfare.

It has been forty years since Sven Nordstrom, a young mining engineer, expressed his ardent dissatisfaction with existing valves by dusting a better one. It was the first lubricated plug valve, and made possible a whole new concept of dependable efficiency in the control of liquids and gases. Today, the Rockwell-Nordstrom valve is still the most widely used lubricated plug valve in the world, with its usefulness extended to applications never dreamed of by Sven Nordstrom four decades ago.

Because its growth comes in regional "pieces" as pipelines are extended, few people across the country realize that natural gas is America's fastest growing industry. Of all the available evidence of this growth, perhaps the most dramatic is this: natural gas customers have increased from 9,366,000 in 1946 to 21,399,000 at the end of 1954—not counting more than five million customers who use manufactured or mixed gas of which natural gas is a component.

Two new products of our Delta Power Tool Division, first previewed at the Metal Show, are now in the hands of our Franchised Dealers (and many of our customers) from coast to coast. They are a new long bed metal lathe, designed for production work as well as for tool room, experimental department, and school shop use; and an improved 14" metal cutting band saw which features a wider range of speeds, plus simplified speed changing.

One of a series of informal reports on the operations and growth of the

ROCKWELL MANUFACTURING COMPANY



0

Utilities Unperturbed By Thorium Price Hike

The new, increased price of thorium for use in atomic power plants will have little effect on construction of such facilities. Even those builders of atomic plants planning to use large amounts of thorium appear to be little concerned over the price boost.

Atomic Energy Commission, which now is the sole source of supply of thorium metal for atomic reactors, announced a price of \$43 per kilogram last week. AEC's previous price on the metal never was made public, but reportedly was under \$30.

• Lower Costs Seen—The trade looked at the new price as reflecting the commission's probable cost of producing and fabricating the metal. But industry sources pointed out that AEC produces thorium in comparatively small amounts—almost on a research level. When commercial demand develops, it is felt, increased production will reduce costs.

Atomic plant builders are interested in thorium because it can be converted in a reactor to fissionable uranium-233, much as natural uranium is converted to plutonium.

Two electric utilities—Consolidated Edison Co. of New York and Pennsylvania Power & Light Co.—are planning to build commercial plants that will convert thorium as they produce heat for power.

Consolidated Edison plans to include thorium in the fuel elements of its reactor, along with fissionable uranium. It is estimated that this plant will require 8,275 kg. of thorium—costing more than \$350,000 at the present AEC price.

• Compensation—High as this cost would be, Con Edison apparently feels that the value of the uranium-233 produced would compensate for it. Additionally, the Con Edison reactor will not be ready for testing before 1959, and fuel elements could be one of the last components fabricated. Meanwhile, thorium costs may well decline.

PP&L plans to put a blanket of thorium around the core of its reactor. But the company doesn't plan to get this machine in operation before 1962, so it has even less concern over present thorium prices.

At least one private concern, Lindsay Chemical Co., has expressed some interest in building a plant to fabricate thorium metal. AEC now owns the only such facilities. But Lindsay spokesmen say its plans have not yet taken definite form and it would take several years at least to get a fabricating plant in operation.

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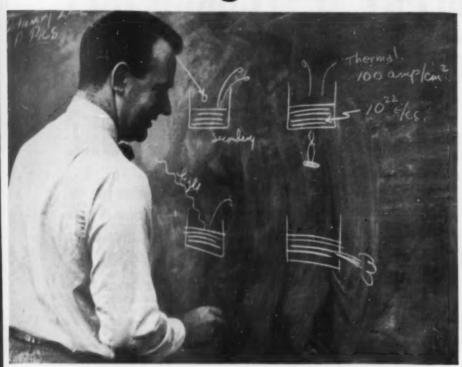
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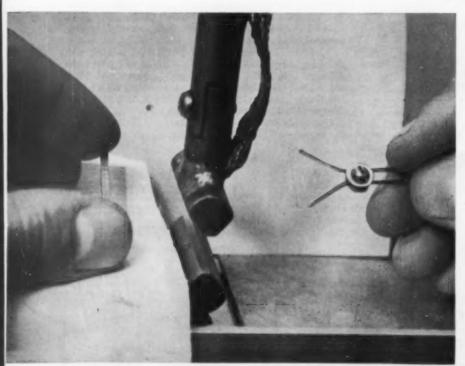
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A Big New Idea From a Small



ELECTRONIC energy sources are diagramed by Dr. W. C. Dyke, Linfield College.



TOUCHIEST STAGE in making Dr. Dyke's new Linfield tube is spot-welding the tiny tungsten needle (in holder on right) to a tungsten strip (on left). Tip of the needle can be seen clearly only through an electronic microscope.

Dr. Walter C. Dyke (picture, left), a physics professor at a small liberal arts school tucked away in a rural Oregon Valley, has come up with an electronic tube on a new principle that could revolutionize the high-power vacuum tube industry, much as transistors are revolutionizing miniature electronic equipment.

Dr. Dyke's discovery is also the foundation for the first full-fledged college research institute in the Pacific Northwest.

Dyke is one of the 50 faculty members of Linfield College (less than 600 students) at McMinnville, Ore. His brainchild is known technically as a 1-million-watt field emission cathode. It is designed around a tiny tungsten needle (bottom left) whose tip can't be seen clearly even with a high-powered lens microscope.

What the Tube Does—When voltage is applied to the needle in a Linfield tube. Dyke explains, electrons pour off in a steadier, more concentrated stream than in any other method of electronic emission now in use.

Electronic tubes are somewhat like valves or switches—regulating, modulating, increasing, or decreasing the current, which is made up of electrons. Electrons are used because they're the lightest and most easily controlled particles now available to science.

It is desirable to control electrons in concentrated streams for the same reason you put a nozzle on a garden hose—you get a large volume of current in a small area in a hurry. The big problem in electron tube design has been to get the greatest possible amount of water (electrons) through the hose and, at the same time, be able to turn the hose off and on quickly. This, in essence, is what the Linfield tube achieves.

• Blackboard Analogy—To illustrate how this field emission system works, Dyke uses the blackboard analogy shown in the picture. He depicts buckets of water as electrons and compares electron energy sources like this:

• Using the thermal method (top right in the picture), you'd build a fire under the bucket to cause water (electrons) to boil off. This is what happens when the filament in an ordinary vacuum tube is heated.

You can also ram charged particles into a strip of metal, displacing some electrons. It's like tossing a rock into the bucket (top left), splashing out some of the water.

 Another way is photoemission (bottom left in the picture), with a powerful light driving some electrone from the surface.

College

• In the Linfield tube, it's as if you punch a hole (the tip of the tungsten needle) in the bucket, letting the water (electrons) squirt out.

This field emission of electrons was theory as long ago as 1897. The trick in putting the theory into practice has been to find a source of electrons that could be readily controlled, that wouldn't disintegrate in an electric field. Dyke's tungsten needle comes as an answer.

• Many Uses—The Linfield tube is not a miniature, isn't even small enough for ordinary radio receiver use. However, since it doesn't require heat—hence doesn't have to be cooled—the size and weight of many electronic devices can be reduced. And the intensity of its electronic emission makes it useful in X-ray photography and high-speed photography.

Doctors of tomorrow, for example, may be able to get extremely fast motion pictures of the heart's action. In the study of ballistics, the tube's instantaneous flash has already stopped movement at 1-millionth of a second. High-speed photos will help in jet plane research, in space medicine.

The Linfield tube may also find a role in cancer research. In the next few months, research will be under way on its use in oscilloscopes (the technical name for TV picture tubes).

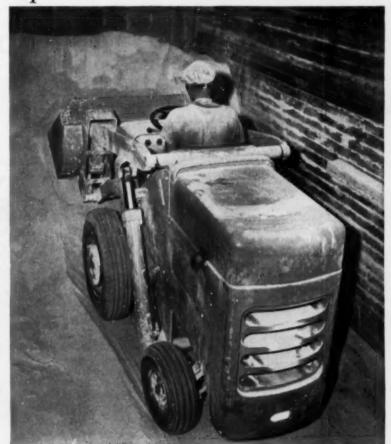
Research Institute—As Dyke's project began to claim more time of Linfield College's faculty manpower—taking six out of 50 staff members—it seemed desirable to separate the research work from the regular college program.

"We knew it was an important scientific discovery," says Harry L. Dillin, president of Linfield, "but the emphasis we were forced to place on it was creating an imbalance, both in faculty and in allocation of available funds."

The institute was set up as an independent but related unit, patterned on the famous Stanford Research Institute. It can better develop the commercial possibilities of the new tube, can make profitable commercial ties without jeopardizing the college's non-profit tax status. It can round out its staff with the engineers, mathematicians, biologists, and physicists that it needs. "The institute," Dyke admits, "is now staffed top-heavily with thinkers."

The college has lent the institute the money to get started. It retains title to the tube patents and it keeps loose control of the institute by naming the majority of its board of directors. In its first year, the institute, directed by Dr. Dyke, has a budget nearly 25% as large as the parent college. END

Report on the new MICHIGAN 12B



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Army Wants More Planes of



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ARMY wants more heiicopters and other slow, low-flying planes so it can achieve greater battlefield mobility.

> AIR FORCE transports still are needed for airlifting troops; Army is after Air Force to buy more for its use.



... and More Help from Air Force

The wheel-bound, foot-slogging Army is becoming an important new customer for the aviation industry. Compared to the Air Force spending of some \$5.5-billion for planes, the Army is small potatoes. But the Army is steadily putting itself into the air with "low and slow" flying equipment.

Just last week, Gen. Maxwell D. Taylor, the Army's Chief of Staff, said the Army will continue expanding its air arm. He said the expansion plans are not necessarily "predicated" on favorable changes that might be made in current Pentagon restrictions on what the Army can do in the air. Explained Gen. Taylor: "We have a carefully developed air mobility program extending several years into the future. We expect to implement it phase by phase as our financial resources permit."

 Buying Splurge—This year, the Army will buy \$185-million worth of aircraft—liaison planes and helicopters—and place another \$30-million in research and development contracts. Three years ago, procurement came to only \$33million and research and development to \$15-million.

Ever since Korea, Army aviation has grown like Topsy. In 1950, the Army's air arm could be counted in hundreds of planes. The Army now has 3,400 aircraft on hand and at least 1,000 more on order. It has more planes than the old Army Air Corps—predecessor of the now independent Air Force—had in 1930.

I. Row With the Air Force

Just how fast the Army's aviation grows depends pretty much on how it comes out in its squabble with the Air Force that has been boiling up over the past year (BW-Dec.10'55,p30). The Air Force is jealous over the sharp growth of the Army's aviation arm. If the Army wins out on expansion, companies now making Army planes will be in for bigger orders. And other aircraft companies will be competing for shares of a brand-new defense market. ready, United Aircraft Corp.'s Sikorsky Div., Piasecki Helicopter Corp., Bell Aircraft Corp., and Hiller Helicopters are knee-deep in Army business. Others, like McDonnell Aircraft Corp., a big Navy supplier, and Fairchild Engine & Airplane Corp., which sells heavily to the Air Force, have important development projects.

 Restrictions—Under a "memorandum of understanding" signed with the Air Force in 1952, the Army is allowed to have planes to make observation flights, transport equipment and small units of personnel, pick up medical cases, lay wire, etc. But it is restricted to ownership of fixed-wing planes under 5,000 lb. and helicopters, and to field flights within a combat zone of 50 to 100 mi.

But the Army is bucking these restrictions. It wants heavier planes that can fly faster and farther than the ones it has now. It would like to see the weight restriction scrapped so it could buy any plane needed for its authorized air missions. And it claims new techniques of warfare make the 1952 limitation of the combat zone to 50 to 100 mi. meaningless—troops will be much more widely dispersed to protect them from nuclear weapons.

 Air Force Position—The Air Force says the Army is trying to take over traditional Air Force missions—such as aerial transport of troops—and that increasing Army aviation expenditures are draining the defense budget. But its basic opposition to the Army's plans centers around the belief that another war would be decided quickly with airborne nuclear weapons and that ground troops would not be needed in the initial decisive stage (BW—Dec.3 '55,p30).

The Army sees things differently. With enough aircraft the Army believes it could achieve the battlefield flexibility and mobility that will be needed to give it a bigger role in the atomic age.

• Transport Ruckus—The Army-Air Force fracas over aircraft is further complicated by the Army's claims that it has too little control over Air Force planes that transport Army troops and equipment and give tactical support to ground forces. In addition, the Army complains that the Air Force just doesn't buy enough transport planes and so it is putting on pressure for more airlift—provided by the Air Force. The Air Force, on the other hand, cut back the number of troop-carrier wings it plans.

Some Army officers go so far as to propose that the Air Force's Tactical Air Command—the tactical fighter and troop-carrier wings—be transferred to the Army. But the official Army line is to steer clear of such a radical recommendation and simply push for favorable changes in Air Force policy.

That's the tactic the Army has used in the past and it intends to keep nibbling away at top Pentagon brass for spot rulings allowing it to expand its use of aircraft. So far, the Pentagon has not hinted about a new basic decision



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FIXED-WING planes used by Army carry few passengers, resemble light civil craft.

either greatly expanding the Army's air role or cutting it off at the knees.

• Flare Up—The dispute between the Air Force and Army came to a head two months ago in Louisiana during "exercise Sage Brush," the biggest joint maneuver since World War II. The Army brought in almost 700 of its helicopters and other light airplanes to take part in the war games. Included was an experimental "Sky-Cav" airborne reconnaissance unit, made up of 500 men and 29 planes set up to drop behind enemy lines and gather tactical intelligence information.

During the early stages of the exercise, however, Air Force Gen. O. P. Weyland, the maneuver director, banned the Army from flying missions in its own planes into "enemy" territory. Army officers got so riled up over Weyland's order, they prohibited their troops from flying in Air Force helicopters. As the controversy continued to get out of hand, the Pentagon was brought into the matter. As a result of strenuous Army politicking, Air Force Secy. Donald Quarles eventually overruled his general and the Army was allowed to use its own planes.

• The Big Clash—One of the most heated aspects of the Army-Air Force controversy concerns air transport. The Army's goal is to make its combat units as mobile as possible. To this end, organizations are being streamlined and equipment made lighter. But adequate airlift is a "must" for the Army to achieve its goal.

Right now, the Army says it could fly an entire infantry division—some 18,000 men and essential automotive equipment and artillery—from the U.S. to Europe in about 390 of the Air Force's Douglas C-124 Globemasters. The assault element of an airborne division could be dropped into combat up to 750 miles from its base in about 625 Fairchild C-119 flying boxcars.

The Army charges the Air Force is not devoting enough of its resources to airborne troop operations.

• Troop Carrier Cutback—Indeed, the Air Force has cut its plan for 17 troopcarrier wings by 1957 to only 11. And in November it cut back production of



H-21 is Army's largest helicopter. It carries 20 men or 4,500 lb. of cargo.

Fairchild's new C-123 assault transport, which can take off and land with 60 battle-equipped men on about 2,000 ft. of unprepared runway. The Army looks at this plane as a star factor in boosting its airborne capabilities.

In defending itself, the Air Force hurls these arguments at the Army; Chief responsibility of the Air Force is to provide continental air defense and strategic atomic retaliation. Its other missions would suffer if it bought more transports—unless the Air Force budget were hiked. In event of war, the overseas deployment of Air Force strategic bomber groups would rate priority over the airlifting of troops.

II. Army's Wings

Army Secv. Wilber M. Brucker attempts to clarify the Army's position on aviation this way: "The Army does not seek to create an Army Air Corps duplicating functions of the Air Force. The Army's need is for relatively slow, low-flying planes, geared to the environment of the infantryman—just the opposite of the fast, high-flying aircraft of the air force. There is no conflict in this area."

• Present Craft—Here's how the Army air arm shapes up now: Roughly 60% of its planes are helicopters; the remainder are fixed-wing "hedge-hoppers." The 'copters range in size from Bell's 1,435-lb. H-13, which carries two men and is used as a divisional recon or courier plane, to Piasecki's 8,600-lb. H-21, which carries 20 men or 4,500 lb. of cargo.

Army units are equipped with four types of fixed-wing planes—the Cessna L-19, a two-place observation plane, DeHavilland's L-20 "Beaver" six-place utility plane and U-1 "Otter," and the Beech L-23 twin-engine command plane carrying five passengers. Most of these are military versions of light civil aircraft.

Within the next year, Sikorsky will start delivering a twin-engine cargo helicopter, the H-37, which can fly on one engine. During the same period, the Army plans to borrow 10 Cessna T-37 twin-jet trainers from the Air

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XV-1 CONVERTIPLANE is being tested by the Army. It takes off vertically and flies forward like a fixed-wing plane.

Force for field testing. The Army is enthusiastic about small jets for observing atomic artillery and guided missile

· Development Work-In development are several additional Army

planes. Among them:

· McDonnell's XV-1 convertiplane that takes off vertically like a helicopter and flies forward like a fixedwing plane. Tests are being carried out on two prototype models.

· Bell's XV-3 convertiplane that has twin rotors on the wing tips. The rotors can be let down into a horizontal position for use as propellers after a vertical take-off. But so far the plane has been flown only as a helicopter.

• Bell's XH-40 turbine-powered helicopter that reportedly climbs as fast as a World War II fighter. The producer rolled out a full-scale mockup in

November.

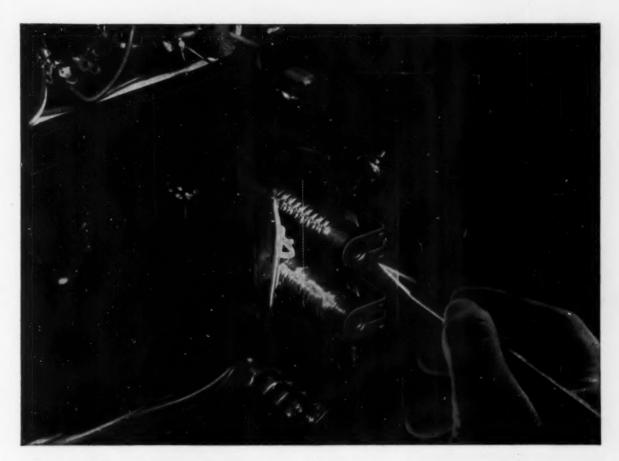
The Army also is interested in Piasecki's YH-16, a 40-passenger, jetpowered 'copter, demonstrated for the Air Force in November. Before deciding on procurement, however, the Army wants Piasecki to strengthen the fuse-

At the moment, Army officials hesitate to discuss the outlook for Army aviation. First, they want to see whether the restrictions will be lifted. But this spring, the Army plans to hold an industry symposium on aviation at Ft. Benning, Ga. Present and potential Army aviation suppliers will be invited. Presumably, future Army aviation requirements will be disclosed more specifically at that time.

· Procurement-The Army would like more say in its dealings with the aviation industry. Under current Defense Dept. policy, almost all Army aviation procurement and research and development contracts are handled by the Air Force. Two helicopter models are

bought through the Navy

Says Maj. Gen. H. H. Howze, chief of Army's new aviation division: "The Army doesn't want to take over procurement. We only want the privilege of more direct negotiations with our contractors." END



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unit securely in place. This SPEED CLIP cuts costs on the assembly line. And it permits fast and simple adjustment of the television tuning coils, eliminating the problem of blindly searching with a screw driver for the slot of a special hex nut.

Find out how Speed Nut Brand Fasteners can help you improve your own fastening methods. Ask your Tinnerman representative for details of our Fastening Analysis Service or write for Bulletin No. 336.

TINNERMAN PRODUCTS, INC., Box 6688, Dept. 12, Cleveland 1, Ohio Canada: Dominion Fasteners, Ltd., Hamilton, Ontario. Great Britain: Simmonds Aerocessories, Ltd., Treforest, Wales. France: Aerocessoires Simmonds, S. A., 7 rue Henri Barbusse, Levallois, (Seine). Germany: Hans Sickinger GmbH "MECANO", Lemgo-i-Lippe.





for prices today.



In Washington

Administration Vies with Democrats On Stemming Tide of Mergers

The Administration plumped hard this week for a lot more money and new legislation to make the anti-merger law a much more effective weapon. The Republicans are out to counter charges of big business favoritism made by the Democrats.

With both parties eying the political impact, the money and new legislation are expected to win an O.K. from Congress.

Eisenhower's budget calls for million dollar increases for both the Federal Trade Commission and Justice Dept.'s Antitrust Div

FTC Chmn. John W. Gwynne led off for the Administration at hearings this week on merger legislation being proposed by the Democrats. He told a House Judiciary Antitrust Subcommittee the present law is "inadequate."

 Corporations intending to merge should be required to notify FTC (and/or Justice) 90 days in advance if their combined capital, surplus, and profits exceed \$10-million. No merger could take place until 90 days after this report is filed.

• FTC should have power to ask for premerger injunctions. FTC wants authority similar to that now held by the Attorney General to prevent a merger before it happens or preserve the status quo after a merger until FTC has a chance to rule on its legality.

 The anti-merger law should apply if either the acquiring or the acquired company (not both, as at present) is engaged in interstate commerce.

Hearings on the Democratic antitrust bills continue next week when Justice Dept. antitrust chief Stanley Barnes is expected to support pre-merger notification legislation.

"Minor Items" of Budget Provide For Housing, Construction Surveys

Eisenhower's budget (page 27) contains dozens of what might be called "minor items" that are of particular interest to many businesses. Here are some nuggets:

The first national inventory of housing since 1950 is being planned by the Census Bureau. The \$1.8-million census would show breakdowns on quantity and quality of available housing.

Commerce Dept. would get \$800,000 to improve figures on private non-residential construction and non-federal public works and to publish amounts spent and materials used in home improvement.

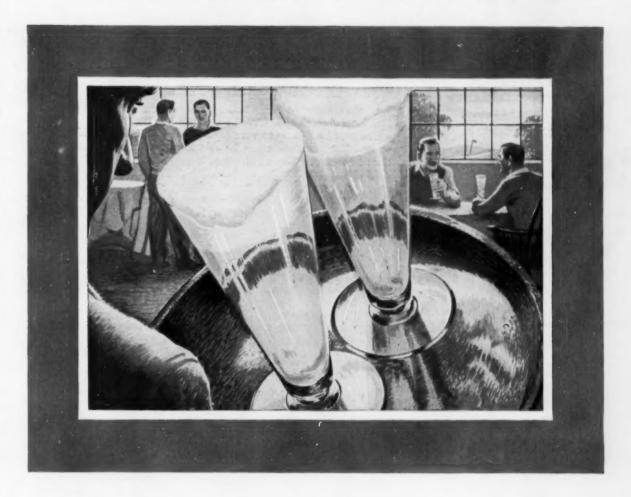
Spending for atomic reactors comes to \$234.9-million for next year, up from this year's \$159.9-million. Atomic power for planes gets \$74.6-million, for Navy atomic propulsion \$61.2-million.

In line with his belief that those benefitting from federal public works should pay part of the cost, Eisenhower has renewed his request for a channel for the Delaware River between Trenton and Philadelphia that is only 35 ft. deep. A year ago, the Administration asked U. S. Steel and other local beneficiaries to pay half the cost of dredging the channel to the 40-ft. depth they want.

Stockpiling is petering out. No new appropriation is being

How black carbon keeps beer clear

A versatile way to remove impurities, Darco activated carbon puts added quality...added sales appeal...in products ranging from sugar to sulfa drugs.



Beer is perishable, and under modern refrigerated storage conditions it develops a "chill haze" if certain proteins are not removed. Brewmasters find that a tiny dose of Darco® BG activated carbon quickly collars the offending protein molecules . . . without touching those that produce the good flavor and foaming action.

The same black carbon that helps make clear, light, better-tasting beer is used to purify a whole array of products ranging from sugar to sulfa drugs. One more example of Atlas creative chemistry at work making everyday products more appealing to the consumer . . . more profitable to the manufacturer. Atlas Powder Company, Wilmington 99, Delaware,



SORBITOL, POLYESTER RESINS EMULSIFIERS, DETERGENTS EXPLOSIVES, ACTIVATED CARBONS



of CMP restricted specification cold rolled strip steel



True costs of cold rolled strip steel are oftentimes clouded by unfamiliarity of the full potential with a specially tailored product such as CMP processes.

Typical of the reductions in overall manufacturing costs that can often be recorded with the use of CMP restricted specification strip, is the elimination of manual costs involved in the tear-down and re-assembly of components rejected for malfunctioning due to steel dimensional variations. Where precision fitting of components is essential to satisfactory equipment operation, the extra steel cost for close gauge accuracy is more than offset by greater parts pro-duction per machine hour and reduction or elimination of rejects at final assembly. Add to this the lower end product cost resulting from longer tool life, fewer coil changes on production equipment and other labor cost items.

The conclusion often is that it pays to buy a premium specification product to lower the cost of an end product employing cold rolled carbon, alloy or stainless strip steel.



CMP Products-law carbon, electro zinc coated, high carbon, tempered spring steel, stainless and allay.

the Gold Metal Products co.

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PLANTS: YOUNGSTOWN, O., INDIANAPOLIS, IHD.
SALES OFFICES:
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Chicago * Los Angeles * San Francisco

asked for next year and spending carryover funds are expected to drop to half this year's figure of \$713-million.

Administration Wants to Set Up Federal Water Resources "Czar"

Eisenhower submitted to Congress this week a comprehensive plan for water resources development that would (1) establish a water project planning "czar" in the White House and (2) demand greater cost sharing by state and local beneficiaries.

Drawn up by Interior Secy. McKay, Defense Secy. Wilson, and Agriculture Secy. Benson, the new policy would require:

Congressional support of all projects.

Submission of all federal water projects to a coordinator.

 Payment by power and industrial water users and other identifiable beneficiaries for full cost of benefits they receive.

Congress isn't likely to vote anything like what the President wants. But Eisenhower may be able to put some recommendations into effect w'thout legislation.

GSA Is Called on Carpet Again For Its Handling of N'aro Deal

This week the General Services Administration, under Director Edmund Mansure, is on the hot spot again for the way it handled a \$1-million expansion of the government's nickel facilities in Nicaro, Cuba.

A House Government Operations Subcommittee is probing charges that Microre too d Nicaro's unemployment insurance brokerage contract to Villiam J. Balmer, a Cook County, Ill., GOP chairman, because Balmer helped Mansure to get his job at CSA.

The subcommittee also wants to know the circumstances under which National Lead Co., which got the contract to operate the expanded Nicaro facilities, awarded half of the construction contract to Louis Wolfson's Merritt-Chapman & Scott construction company; Frederick J. Snare Corp. had the other half.

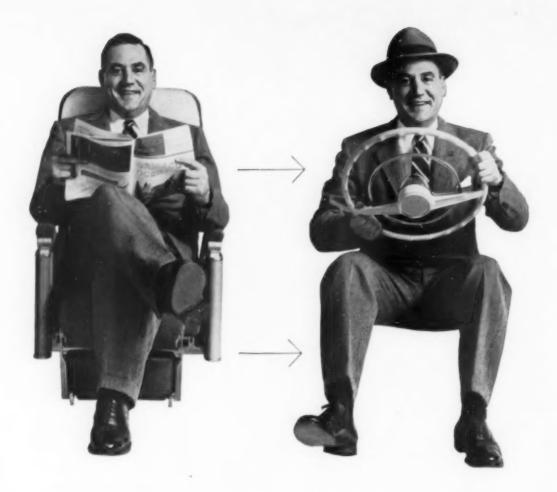
In answer to questions, Mansure explained he checked with GOP Chmn. Leonard Hall about letting the building contract to be sure none of the bidders had a reputation for getting jobs on political pull. He also said he thought it was time Eastern insurance brokerage firms stopped getting all the government contracts. He said these contracts traditionally are a "by product of politics."

U.S. Unloads a "White Elephant"— Rubber Plant to Bring \$11-million

The government's last synthetic rubber plant—a "white elephant" that couldn't be sold in 1954—is now to be sold for \$11-million to Goodrich-Gulf Chemicals, Inc. The deal, negotiated by the Synthetic Rubber Disposal Commission, is before Congress. Either house can veto the sale by voting against it within 30 days.

Goodrich-Gulf's bid is more than double the plant's current book value of \$4.9-million. The high price almost automatically defeats any Democratic attempt to label the sale a Republican giveaway to big business.





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Have you discovered the speed and economy of Avis Rent-a-Car service?

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INTERNATIONAL OUTLOOK

BUSINESS WEEK JAN. 21, 1956



When you think of India's economic development, count in Japan and West Germany. Both countries are ready to take a big hand in the new Indian five year plan.

- Japan has just signed an agreement in New Delhi to swap locomotives and rolling stock for Indian iron ore. Premier Hatoyama sent his personal representative, Takeo Miki, to put over the deal, hopes that it will lead to a much larger one.
- Vice-Chancellor Franz Bluecher has just been in India to discuss West Germany's economic role there (BW—Jan.14'56,p114). He is being followed in March by a high-powered mission of German industrialists, led by Fritz Berg, head of West Germany's NAM.

Last year West German exports to India topped \$110-million. The Germans ranked third among India's suppliers—after Britain (\$350-million) and the U.S. (\$180-million).

German sales in India probably will jump by at least 20% this year. Equipment soon will be on its way for the steel mill Demag is building. The Daimler-Benz truck assembly plant in India has an O.K. to import \$10-million in parts.

Two big industrial projects are in the discussion stage: (1) for Bayer of Leverkusen to build a heavy chemicals plant for the Indian government; and (2) for Koppers of Germany to build a \$100-million synthetic oil plant.

The Indo-Japanese ore agreement is just a starter for a scheme that has been pending for several years—a big rail and port project, which the Japanese would build, in the Indian state of Orissa.

The new facilities would handle 2-million tons of ore a year. (Under the present contract the Japanese are to get 700,000 tons.)

Japan and India have agreed to approach the U.S. for a \$25-million loan to help finance the project. Japan would put up \$7-million.

If the scheme goes through India would gain foreign exchange that it will need for its five year plan. Japan would have a new source of iron ore and manganese, and probably of coal—reducing the pressure for trade with Red China.

U.S. officials in India are making a big pitch for the scheme. They figure that this is the kind of aid that will go down well in South Asia—and in the U.S. Congress.

The fact is that the Eisenhower Administration has just about ruled out any chance of giving the Indian five year plan a boost by granting an increase in aid. Washington officials have been assuming that they would be lucky to get the present amount of aid—\$50-million a year—out of Congress.

Despite its cautious approach to Indian development, the Administration will stick by its proposal for a long-term aid program—to help economic development in South Asia and the Middle East.

Pres. Eisenhower has no intention of knuckling under to the bi-partisan

INTERNATIONAL OUTLOOK (Continued)

JAN. 21, 1956

Congressional opposition which is now being led by Sens. Walter George (D-Ga.) and William Knowland (R-Calif.).

Eisenhower and Secy. of State Dulles regard the long-term program— \$1-billion over 10 years—as the cheapest and most effective U.S. snswer to Soviet tactics in the uncommitted countries.

The Administration's problem is to get Congress to see that new development projects in backward countries, which take years to complete, cannot be financed on a year-to-year basis. What the Administration wants is a commitment—in time though not in money—that would go beyond the one Congress made with the Marshall Plan.

Some compromise is likely. The exact duration and amount of the program is less important to the Administration than getting Congress to support the idea of long-term aid commitments.

Dulles is under fire from both the right and the left in Congress.

The Democrats are attacking the Dulles doctrine of atomic deterrence which was outlined—with exaggerated starkness—in the now famous Life article. They charge either that it is immoral or that it amounts to a dangerous bluff when combined with cuts in our conventional armed forces.

On the right, Sens. Knowland and Styles Bridges (R-N. H.) are set to attack Dulles for "softness" toward Red China.

The Knowland-Bridges attack will focus on the confirmation of Robert R. Bowie as Assistant Secretary of State for Policy Planning. Bowie, who is one of Dulles' closest confidants, takes the position within the Administration that we must be "realistic" in Asia, accept the fact that Communist rule of China is here to stay.

Knowland and Bridges have attacked Bowie privately already. They may well make the confirmation fight as rough as that ever Charles E. Bohlen's appointment as ambassador to the U.S.S.R.

The Kremlin has set its sights high in the new Soviet five year plan.

For basic industry the key targets are: steel, 68.3-million metric tons; coal, 593-million tons; oil, 135-million tons; electric power, 320-billion kwh.

Grain production is to rise to 180-million tons, up at least 70%. Home building is to be doubled. Output of consumer goods is to rise 60%.

On the basis of these and other goals, total output of Soviet heavy industry in 1960 would be about half today's U.S. figure. And judging by past performance, plus the vast expansion planned for Soviet technical education, you can expect the U.S.S.R. to reach its goals.

But the over-all figures understate Russia's war potential. Consider the 1960 goals in two critical areas—electric power and steel. In the nature of the Soviet economy, the Russians in 1960 would have (1) about as much power available for producing nuclear weapons as the U.S. does today; and (2) as much steel for arms as the U.S. would have today if we went on a full war footing. (At the height of World War II, we used 50% of our steel for arms, while the Russians used at least 90%.)

As for the targets for agriculture and consumer goods, past performance suggests that the Soviets will fall far short.



HERE'S PROOF of the rugged dependability of a General Motors Hydrostarter—the new, low-cost hydraulic starting system now available on all GM Detroit Diesel engines:

On public demonstration at the GM Powerama, a Hydrostarter started a GM Detroit Diesel 26,783 times in 26 days—an average of more than 1,000 starts per 12-hour day—more than 1 start every minute.

A Hydrostarter gets a GM Detroit Diesel up to starting speeds 80% faster than regular starting systems—costs less to maintain than electric starters—sells for a far lower price than any other non-electric Diesel starter.

And it gives you fast, sure starts—even at subzero temperatures, or when your equipment has been standing idle for long periods of time.

Call your GM Diesel Distributor for full details on the GM Hydrostarter—or write direct for more information.

DETROIT

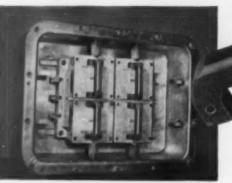
Engine Division of General Motors

Single Engines ... 30 to 300 H.P. Multiple Units ... Up to 893 H.P.

America's Largest Builder of Diesel Engines

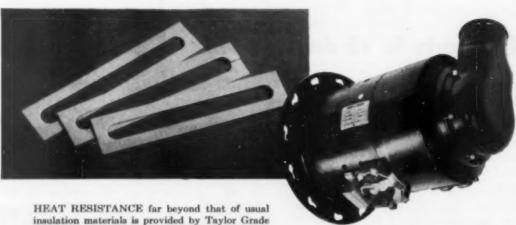


RESISTANCE TO CHEMICAL ACTION, stable electrical characteristics over wide humidity and temperature ranges, and light weight are essential in the rolled tubing of this new electronic fuel tank gage for military aircraft. Taylor Grade GEC glass base epoxy laminate gives outstanding service.



MECHANICAL STRENGTH and high resistance to corrosive fumes are vital characteristics of the handles for heavy-duty fuse boxes in special marine installations. Taylor Grade G5 glass base melamine laminate assures performance to rigid specifications.

Need high-performance



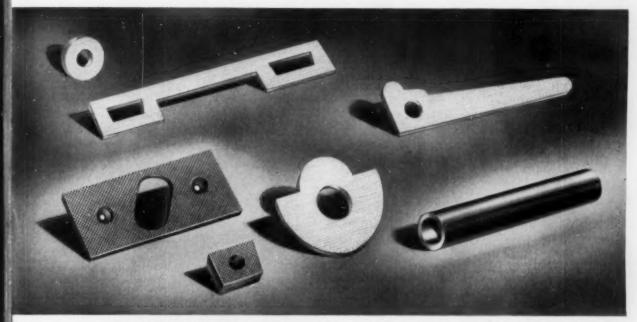
HEAT RESISTANCE far beyond that of usual insulation materials is provided by Taylor Grade GSC glass base silicone laminate used on rotor windings of air-blast cooled DC generator.

investigate these Taylor Materials

For the Products You Make.

Vulcanized Fibre Melamine Laminates
Phenol Laminates Epoxy Laminates
Silicone Laminates Combination Laminate

Polyester Glass Rod



GLASS BASE LAMINATE PARTS, in a variety of shapes and sizes, are produced for customers in the Taylor Fabricating Division. Long experience, proper facilities and skilled personnel enable Taylor to help manufacturers avoid many scheduling, production and inventory problems ... by fabricating close-tolerance parts to rigid specifications,

electrical insulation?

Taylor glass base laminates meet the most critical requirements... and Taylor can fabricate them to your exact specifications

THE SUPERIOR performance of Taylor glass base laminates in critical military and civilian uses points the way to a dual opportunity for manufacturers of electrical and electronic equipment.

First, these versatile insulation materials offer practical means of improving existing product performance. Second, they frequently make it possible to get new products off the design board into profitable new markets.

There are many grades of Taylor glass base laminates...each using a special formulation of Taylor phenol, silicone, melamine, or epoxy resin. This assures ready availability of an insulating material with the specific characteristics you need...even

for operating conditions normally considered extreme.

Taylor produces these laminates as standard, volume products—in sheet, tube and rod form.

Many manufacturers find it to their advantage to have Taylor's Fabricating Division produce their glass base laminate parts. They count on Taylor's equipment, experience and specialized techniques to simplify production problems . . . safeguard schedules . . . eliminate inventory problems . . . and afford overall economies.

Get in touch with your nearest Taylor sales engineer for a discussion of how the unique combination of Taylor glass base laminates and fabricating facilities can be put to work for you.

TAYLOR FIBRE CO. Plants in Norristown, Pa. and La Verne, California

Branch Offices

Atlanta Detroit* Philadelphia
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Cleveland* Milwaukee* St. Louis
Dayton* New York* Rockville, Conn.

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TAYLOR Laminated Plastics Vulcanized Fibre

*Teletypewriter service at both plants and these branches



House Built in 1946 Has . . .

748 sq. ft. of living floor space 5 rooms 1 bath Unfinished attic

Fixing Up the House: This Is

The picture on the right shows what's happening to the little home (left) that was built in 1946. No longer big enough to house its growing family, nor swank enough to satisfy its owner's upgraded standard of living, it typifies what's going on all across the nation.

This year, even more ladders and scaffolding will dot the architectural landscape, as building and allied trades, alert to the surging market, gang up to make 1956 "the year to fix." This week, Operation Home Improvement, a giant interindustry promotion, burst out all over.

• Government Blessing—The official kickoff came at the Mayflower Hotel in Washington, D. C., where Albert M. Cole, administrator of the U.S. Housing & Home Finance Agency gave Operation Home Improvement the government's blessing. On the same day, in Scars, Roebuck & Co.'s 707 retail stores, OHI information booths popped up, to tell consumers now is the time to fix

up their homes-and to tell them how.

The next day, the February issue of House Beautiful magazine came out, with its entire editorial content devoted to home improvement. Collier's had already featured it editorially the week before. The January issue of Better Homes & Gardens announced a yearlong home improvement contest, with prizes amounting to \$25,000 in cash.

In Oakland, Calif., the mayor proclaimed Home Improvement Week on the day that Cole announced Home Improvement Year for the country at large. Untold numbers of dealers, contractors, manufacturers began to wave before the consumer and their own salesmen the seal and slogan of the drive.

 Dual Aim—What is behind one of the biggest campaigns ever to separate a consumer from his money?

Operation Home Improvement has two avowed aims: to get more people interested in improving their homes; and to make it easier for those people to get financing, materials, and services. Top sponsor is the U.S. Chamber of Commerce, whose F. Stuart Fitzpatrick is chairman of the coordinating committee. Executive director of that committee is John R. Doscher, former assistant to the publisher of Life magazine.

Money to put the show on the road came from some 50 trade associations, manufacturers, distributors, retailers, financial institutions, and publications. Backers include homebuilders, electrical contractors, retail lumber dealers, manufacturers, savings and loan associations.

I. What It's About

The size and mix of this backing say plainly that the stakes are big.

Cole figures on a big home improvement market this year:

"I believe that over 10-million homes



Twin House Built Same Year Now Has . . .

1,987 sq. ft. of living floor space

8 rooms

2 baths

Patio

the Year

will receive substantial improvements during 1956 at a cost of over \$9-billion. An additional 10-million homes will receive maintenance and repairs in excess of another \$5-billion." (Cole's figures include such things as the value of appliances going into home modernization.)

• Second String—Until this week, it looked as though this sizable business would be a welcome prop to a slipping home construction market. The construction trades and suppliers have had the improvement business in their back pocket for the past few years, ready for use in case of a serious downturn in new home starts. But with the extension of FHA mortgage terms to 30 years early this week, it is now fairly certain that home construction is going to hold up well in 1956 (page 17).

In any case, coordinators for the OHI drive insist that concern over new housing is not the primary spur

for their current drive. We have reached a new plateau in housing, they say, and it's a high-level plateau. Come the 1960s, when the postwar crop of babies goes house-hunting, and the demand for housing may rise—they say—to 2-million units a year.

 The Potential—The big incentive, OHI backers say, is the prodigious market that exists among householders whose homes are no longer brand new. Nobody knows just how big this market is. Estimates range anywhere from \$8-billion a year up.

Cole's estimate is based on a 1954 study by the Bureau of the Census, derived from a sampling of 2,000 homeowners. Half these people spent \$61 on improvements during the first five months of the year; the other half spent less. Repairs and alterations accounted for 42% of the total outlays; alterations and improvements, 46.9%; additions accounted for 11%. The researchers projected this nationally at \$3-billion for the period, adjusted seasonally and threw in appliances, and came up with the estimate of \$12-billion for the year.

The U.S. Chamber of Commerce

spreads this sum over the 43-million dwelling units in the U.S. and says that it isn't enough to keep them from deteriorating. Really to do this job would require outlays of some \$20-billion. The chamber figures that a 25% to 50% additional expansion is "within probability."

 Money Lenders—For the immediate job ahead this year, the money for home improvement will be made available.

The government will help out through FHA. The Administration will ask Congress to liberalize FHA terms on improvement loans. FHA has proposed that the \$2,500-ceiling loan, set in 1954, be increased to \$3,500, and that the maximum maturity be lengthened from three to five years.

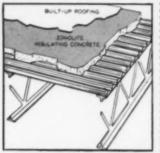
FHA home improvement loans have not been running very high. The net increase in 1953 was \$1.3-billion in this type of loan. But in 1954—despite liberalization of terms—new loans dropped to \$890-million. The reason for this drop lay mainly in the fact that participating banks were made to take 10% of the risk on the loan. This

Great New Benefits Announced in ROOF CONSTRUCTION!

ASTONISHING FIRE SAFETY



This Can't Happen With ZONOLITE! Complete plants have been destroyed because heat-melted tars dripped down through the roof joints—feeding the flames below.



HERE'S WHY: Zonolite concrete decks have no joints. Cannot leak tar to feed flames. In addition, Zonolite concrete is 100% fireproof—cannot burn.

ZONOLITE® VERMICULITE CONCRETE

Provides Fireproof Roofs, Slashes Insurance Rates

as much as 1/2!

Case histories on file show how insurance rates for new commercial, industrial, warehouse, office, and school buildings are being slashed by as much as one-half with fireproof Zonolite vermiculite concrete. Insurance savings in some cases have been substantial enough to completely pay for the roof in a few years.

have been substantial enough to completely pay for the roof in a few years. Reason is, Zonolite concrete—a combination of vermiculite mixed with cement—can be poured as a one-piece roof without expansion joints in any roof deck design. Zonolite concrete acts as a barrier against fires that originate topside or underneath. Nowhere in the construction industry is there to be found an equal to Zonolite systems of roof construction. They can be used as insulation and roof deck combined. They're

simple in design, lightweight, firesafe, insulating, speedy to erect, strong, permanent, have good appearance. Yet, they are low in cost—priced competitively with other systems. Before you build or remodel, get all the pertinent facts about this low cost, fire safe, roof insulation material.

Check These Important Benefits

- 100% FIREPROOF Zonolite cannot burn,
- actually snuffs out flame.

 INSULATES—continuous, joint-free, efficient insulation.
- CUTS DEADWEIGHT—Zenelite concrete seves tons of deadweight; speeds construction; cuts ceets.
- VERSATILE—Used in many different roof designs.
 PERMANENT—Proved reliable, strong, durable—will not ret.

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that gives money-saving details of many roof deck systems...including design data, sectional drawings, etc. Mail coupon. No obligation.

got the fly-by-night operators, who were selling gimmicked-up home improvement deals to homeowners, out of the business. By 1955, new loans dropped to about \$600-million.

 Spur—The new terms should spur business in bigger projects. And there is money from other sources available for homeowners.

Savings and loan institutions, for example, have stepped up their mortgage activity for "other purposes" (loans for repairs, additions, alterations, and refinancing fall into this category) from \$1.8-billion in 1953 to \$2-billion in 1954. Loans for the first 10 months of last year ran 12% ahead of the same 1954 period. Banks likewise are also going in more heavily for uninsured home improvement loans.

The reason for this is that many lenders find home improvement loans safe enough so that they are willing now to go into the field without benefit of insurance, on a conventional loan basis

From the homeowner's standpoint, there are a lot of incentives for improving their present residences. Construction consultant Robinson Newcombe of Washington, D. C., points out that many postwar houses are already too small. Most of them built up until 1953 had two bedrooms. Then the three-bedroom house took over—at a higher price. A lot of homeowners figure up how much it would cost them for a new house, including moving and realtors' fees, and decide to put on an addition.

II. How OHI Works

It's against this background that OHI was born. The idea for it is generally credited to Fritz Burns, big West Coast builder-realtor. Burns took his idea to Cole, who passed it on to Fitzpatrick of the U.S. Chamber of Commerce. Fitzpatrick called a meeting with executives of the trade associations involved, and with some 40 manufacturers. Then, with Doscher from Life and Don Moore from Small Homes Guide magazine, a central coordinating office was set up early last fall in New York City.

• Promotion—First step was to develop an insignia with which to publicize and tie the drive together. Doscher and Moore estimate that that seal will appear in some \$600-million worth of advertising in 1956. The coordinating committee also has sent out display kits, for use by anyone who has something to sell the homeowner.

Each cooperating trade association is setting up a promotion to capitalize on the national campaign. Utilities, contractors, financial associations have been working up their own drives. Because a central problem is to find a

unit that will be the hub for all this activity, the local chambers of commerce are mostly acting as catalytic agents. Cities such as Seattle, Oakland, Los Angeles, Denver, Chicago, New Orleans, St. Louis, Buffalo, White Plains (N. Y.), and Providence have set up their own local promotions.

A biweekly newsletter from the New York office has spread the news. The first letter in September went to some 450 hand-picked manufacturers. The last issue, Dec. 28, went to some 22,500. The price of the newsletter and the

kit together is \$5.

Trade Drives—Meanwhile, some trade associations have already launched their own drives. The National Assn. of Plumbing Contractors is a case in point. This group had devised the idea for a continuing promotion before it had heard of OHI. It is running its own show, with the plumbing contractor as the central source of publicity and information, and a budget of \$75,000 for 1956. Though its campaign is independent, it, too, will use the OHI seal and tie in with its promotion.
 Meanwhile, another industry group,

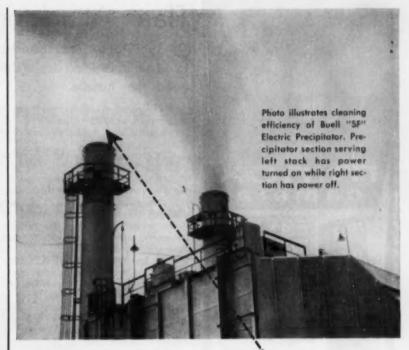
though not tied into the OHI plan, is

also drumming on the general theme of home improvement. Edison Electric Institute last week announced a national advertising campaign-featuring a \$100,000 contest-to push home rewiring programs. The institute estimates that some 20-million homes need re-wiring to cope with the loads created by modern appliances. It will cost \$4.9billion to do this job properly, says EEI. · OHI's Problems-There have been headaches aplenty. A lot of militantly competitive interests are backing the drive. Among contributing manufacturers are Allied Chemical & Dve Corp. (Barrett Div.); American Kitchens (Avco); American Radiator & Standard Sanitary Corp.; Armstrong Cork Co., Celotex Corp.; Certain-Teed Products, Corp.; Congoleum-Nairn, Inc.; Johns-Manville Corp.; National Gypsum Co.; Reynolds Metals Co.; Republic Steel Corp. (Berger Division); U.S. Plywood Corp.; Weyerhaeuser Sales Corp. Publications that have contributed include American Home, Farm Journal, House & Home, McCall Corp.; Popular Mechanics, Saturday Evening Post.

Retailers and many magazine advertisers will undoubtedly go after the do-it-yourself market—a field that the heating, plumbing, and installing contractors haven't much love for. Electric utilities vie with gas; steel kitchen manufacturers with wooden; wet heat

with dry.

It is perhaps significant, too, that in some sectors of this attack there is a lot of room for improvement in merchandising techniques. Many of the service trades have only lately begun to learn how to sell to the consumer. END



Taking the Smoke out of Smog!

STRICT ORDINANCES against air pollution are no problem when Buell Dust Collection Systems are put to work. Why? Because that extra percent of efficiency engineered into Buell systems permits full production even under the toughest anti-air-pollution codes.

HAPPY SOLUTION to your air pollution problem rests entirely in Buell's hands. Buell engineers accept complete responsibility from problem stage to the successful operation.

NO GUESSWORK in a Buell installation either! Buell engineers analyze your "smoke," study your operating conditions, make recommendations based on experience and the performance data of comparable Buell installations the world over.

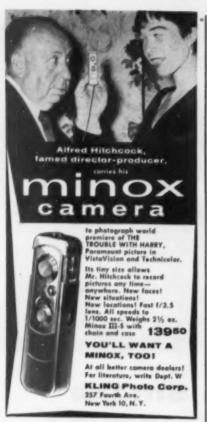
WRITE TODAY for booklet "The Recovery and Collection of Industrial Dust." Dept. 30-A, Buell Engineering Company, 70 Pine Street, New York 5, New York.







Experts at delivering Extra Efficiency in **DUST COLLECTION SYSTEMS**







33" LONG 30" HIGH 21" WIDE

PRICED DIESEL

Fits into same space as gaseline engine of equal rating. The Sheppard Model 17 is available as a complete power package including transmission, torque converter or any special equipment. Sheppard will work with you in fitting the Model I7 into your existing designs. Write, outlining your needs.

Send for complete specifications
SHEPPARD DIESELS . HANOVER S, PA.

BUILDERS OF DIPSEL ENGINES TRANSMISSIONS REAR AXLES AND POWER STEERING UNITS FOR INDUSTRA

Flank Attack on "Overrides"

FTC says commissions paid by major rubber companies to oil outfits in effect deny to service stations the right to choose goods they handle.

The Federal Trade Commission is using the backdoor approach in an attack on exclusive dealing in the service station business.

FTC has issued complaints against three major oil companies alleging that the so-called "overriding commissions" these concerns receive from three major tire companies are illegal. The commissions, running into millions of dollars a year, are paid to the oil companies for promoting tire sales through

their service stations.

• . . . And Others, Too-FTC's complaints are specifically against agreements between B. F. Goodrich Co. and the Texas Co.; Goodyear Tire & Rubber Co. and Atlantic Refining Co.; and Firestone Tire & Rubber Co. and Shell Oil Co. But FTC says similar agreements also exist between these rubber companies and other oil companies. In effect, the final decision on FTC's charges will determine the legality of the web of agreements that the FTC says exists between the three tire companies and half a dozen or more oil companies.

Though the FTC didn't say so, its real target is the exclusive dealing arrangements whereby independent service stations are forced to take the oil companies' lines of tires and accessories. By its approach, FTC is attacking the override agreements underbroad language in the Federal Trade Commission Act against restraints of trade rather than the harder-to-prove provisions against exclusive dealing in

the Clayton Act.

The overriding commissions paid by the tire companies have been under attack for years, mainly by other tire producers—who charge that they are prevented from selling to thousands of service stations.

In addition, FTC says use of the agreements denies to oil distributors and service station operators their right to choose freely the tires, batteries, and accessories they want to buy.

• In Congress—The commissions—ranging from 5% to 10% on all rubber company sales of tires, batteries, and accessories to the service stations—have been criticized in Congress. FTC itself has been studying the way the

thing works since 1949.

Though FTC does not show the combined value of the commissions paid, it gives a breakdown on some of the payments made to individual companies in recent years. It says, for

example, that Firestone paid Texas Co. over \$2.7-million in commissions on sales of tires, batteries, and accessories made through Texas stations and distributors in 1953. None of this overriding commission goes to the service stations or distributors.

FTC takes the line that the control that oil companies have over "ostensibly independent" service stations and distributors—by reason of lease terms, cancellation powers, and purchase contracts—is being used to "designate" which brand of tire, batteries, and accessories they can sell. FTC's case, therefore, adds up to charges of forcing

exclusive dealing.

• The Company Side-S. C. Bartlett, vice-president in charge of domestic sales of the Texas Co., said Texaco believes "there is no valid basis" for the charges. As he explained it, "The Texas Co. feels that its sales commission plan is fair and proper, and that it screes the best interests of its dealers and the motoring public. We have recommended that our dealers purchase tires, batteries, and accessories from companies having national distribution because such companies carry a complete line of high-quality automotive products to meet practically all the needs of the motorist.

"However, our dealers are free to purchase tires, batteries, and accessories

from any other source.'

The other companies named also defended the agreements as proper and legal. Firestone, for instance, made the point that these agreements have stood up under several previous government investigations. Goodyear took the same position and described its plan as "not only legally sound but economically desirable."

 Promotion—The oil companies in general say they provide merchandising and promotional services through their sales staffs for the commissions they

receive.

FTC's charges of oil company pressure on station operators comes on the heels of rising Congressional concern over complaints that oil companies and automobile manufacturers coerce their retail distributors. Rep. James Roosevelt (D-Cal.), who headed one of several Congressional hearings on such complaints, last week introduced a refurbished version of his "freedom of choice in trade" bill—designed to give dealers a bigger stick to fight coercion by their suppliers.

How

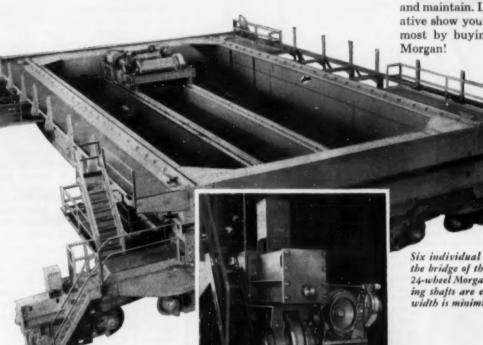
Morgan "points the way"

to smoother

• INDIVIDUAL MOTOR DRIVES were pioneered by The Morgan Engineering Company to improve crane bridge travel... to provide smoother operation, to reduce the number of moving parts, to simplify maintenance, to eliminate dead weight of drive shafts, to streamline the crane. These individual motor drives

These individual motor drives are another vital link in the chain of features that make Morgan cranes the best in the business.

Performance records prove that advanced design and heavy-duty construction of Morgan cranes make them less costly to operate and maintain. Let our representative show you how to save the most by buying the best . . . Morgan!



crane operation

Six individual motor drives power the bridge of this 350-ton, 4-girder, 24-wheel Morgan ladle crane. Squaring shafts are eliminated; walkway width is minimized.



The Morgan Engineering Company, founded in 1868, manufactures overhead electric traveling cranes, gantry cranes, charging machines, plate mills, blooming mills, structural mills, shears, saws, and auxiliary equipment.

MORGAN

ENGINEERING CO. Alliance, Ohio

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Specify DIEBOLD STEEL STORAGE FILES

You won't be trapped by an avalanche of disorganized records when you use Diebold steel files. With Safe-T-Stak's orderly filing facilities you will handle records faster and easier. Diebold files last a life-time . . . increase storage room capacity up to 100%...lock securely in rig-

id batteries . . . AND COST NO MORE THAN FRAGILE CARDBOARD!

Many concerns have standardized on Safe-T-Stak equipped with sintered nylon bearings for general office filing. For general and storage filing we can prove that Diebold files will save you time and money. Call your local Diebold representative for a free demonstration . . . or write us . . . today!

Get all the facts . . . including case histories about the country's best record filing operations.



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Individual	Title
Individual	Title

MARKETING BRIEFS

To boost meat consumption, the livestock industry is thinking about a national advertising campaign. In Omaha last week, industry leaders from Nebraska and lowa explored ways and means. Karl N. Louis, vice-president of the Brandeis department store in Omaha, offered to contribute up to \$25,000 to a fund, "because when farmers prosper, the rest of us do."

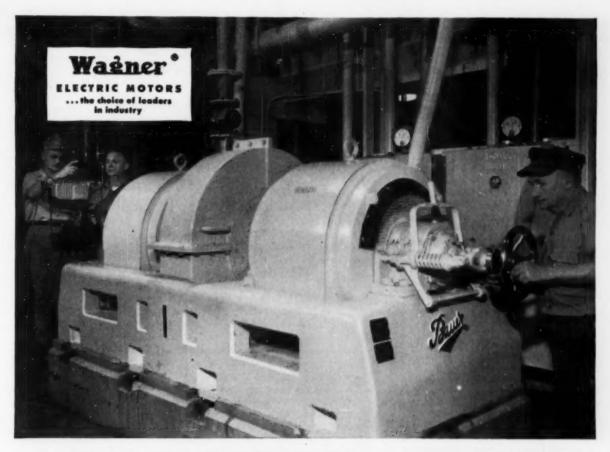
Metallic ink for ads appears in the current issue of the Saturday Evening Post. Curtis Publishing Co., which developed the ink says it's the first ink of this kind suitable for high-speed presses. Advertisers get a choice of gold, silver, red, yellow, or blue for color ad backgrounds.

An electronic built-in oven will soon be available to housewives. Hotpoint Co., a division of General Electric Co., is using an electronic cooking unit supplied by Raytheon Mfg. Co. Raytheon also furnishes its unit to Tappan Stove Co., whose electronic range appeared several months ago (BW—Oct. 29'55,p62).

Colorado's unfair practices act was unconstitutional. An independent grocer in Denver brought suit charging Safeway Stores, Inc., with price cutting. Three months ago, a district judge ruled that the unfair practices act was unconstitutional (BW-Nov.5'55, pl 37). The plaintiff has failed to appeal to the state supreme court within the deadline set, so the judge's ruling stands.

Detroit newspapers are back on the street after settlement of their 46-day-old strike (BW-Dec.17'55,p43). Christmas department store business ran 12% above 1954, but merchants agreed that newspaper ads would have improved it still more. Post-Christmas sales, which store officials thought would be hurt seriously by lack of newspaper advertising, seem to be running at about last January's levels. Used car sales were hit hardest by the strike, with December volume cut in half. The real estate business was also sharply slowed.

British supermarkets are still few in number, but they are playing a significant part in the country's retailing activities. At the end of 1955, Britain had 30 supermarkets in operation, and shoppers seemed to be taking enthusiastically to the self-service principle. Smaller self-service stores are multiplying at the rate of 40 or 50 a month, compared with 30 a month as recently as last summer.



here's how the A. E. Staley Company saved money by specifying Wagner Increment Start Motors

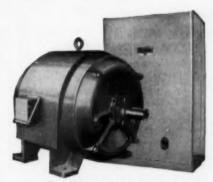
Recently, the A. E. Staley Manufacturing Company of Decatur, Illinois, purchased four new attrition mills to grind corn...a basic step in making corn starch, syrup or any other corn products.

Plans called for two 200 hp motors for each mill... but they had to be motors with low starting current to protect the Staley plant's power distribution system.

Wagner Motors with Increment Starters solved Staley's problem . . . economically, too, because these Wagner combinations are far less expensive than motors with primary resistance or auto-transformer type starters. Yet they fully meet the polyphase motor starting recommendation of AEIC-EEI-NEMA.

Wagner furnished the stators, frames and rotors of these motors to the mill manufacturer, who made and assembled the endplates. The Wagner design permitted the use of identical endplate castings on both ends of each motor, thus cutting pattern costs which resulted in an extra bonus in the form of savings on the purchase price of the mills.

Why don't you investigate the possibilities for savings by using Wagner Increment Start Motors in your plant? Your nearby Wagner engineer will help you select the increment motor and starter combination that meets your requirements. Call the nearest of our 32 branches or write today for Bulletins MU-128 and MU-195.



Type RP polyphase motor In ratings to 400 hp with increment type starter



Wadner Electric Corporation
6460 Plymouth Ave., St. Louis 14, Mo., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES



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RESEARCH LABORATORIES -Designed - Engineered - Constructed to answer your needs and the competition of tomorrow.

SURVEYS, REPORTS & PROCESS DESIGN INDUSTRIAL DESIGN & CONSTRUCTION EQUIPMENT INSTALLATION





PACKAGING ENGINEER

Packaging Engineers are few and far between, but here is one who learned his job on the job . . . and learned it well. Now manager of the Chicago Office, Mr. Kinney is one of many in Kennedy's Mile Long Line of Men and Machines devoted to packaging the products of industry.

If you have a packaging problem Kennedy has talent for sale... talent to improve your package or lower its costs . . . or both.

Call Mr. Kinney, CEntral 6-5445 or visit him at Room 311 of the Daily News Building. He'll give your problem prompt attention as will any of the Kennedy offices. Check the yellow pages for the branch nearest you.



PACKAGING ENGINEERS IN SEVENTEEN PRINCIPAL CITIES

In Marketing

Optimism Blooms in Furniture Industry As Retailers Rush to Build Up Stock

There was nothing but cheerful news for the home furnishings industry out of the annual winter markets in Chicago and Grand Rapids this week. From both came reports of very heavy ordering by retailers and of bright prospects for a record year in 1956.

The only whisper of difficulty lay in deliveries. In both cities, furniture manufacturers talked of big backlogs of orders, which had already started to build up before the markets. At Chicago, retailers were being quoted April delivery dates for orders placed on the first day of the market. At Grand Rapids, delivery dates were put at anything from 30 to 120 days.

The heavy ordering stemmed in the first place from low retail stocks, depleted by a record fall and holiday buying by consumers. It stemmed in the second place from the continuing consumers' buying boom and from the industry's sanguine hopes about what will happen to furniture buying if auto sales continue to drop off this year. The furniture people look on autos as their primary competition, and think they will pick up dollars that don't go into new car purchases this year.

Increases in the price level of home furnishings were important news at both cities. Prices were up over last January on most lines, and there are more increases to come. Beginning with case goods, furniture prices have been moving up in uneven jerks since last summer. Some manufacturers waited until the winter market to raise prices, but across the board home furnishing are up 3% to 8% over a year ago.

Yet no one worries over high prices, the reason being that consumers have been upgrading their buying all through the past year. Dealers say their low-end merchandise with its bargain basement look has been snubbed. So this year manufacturers are throwing lots more style into their low-end products-and raising the price.

On the other hand, makers of higher-priced furniture-John Widdicomb, for example—this year brought out lower-priced lines to attract the great middle-income band of consumers.

As far as new styles go, the markets didn't turn up much other than a return engagement of Danish influence, which features a trim, tailored look. Mostly, however, observers noted all kinds of conflicting trends in buyers' preferences, summed up best perhaps by one manufacturer who said that "mass taste is swinging to contemporary tradition."

NBC Channels New TV Show To Pick Up Local Advertising

NBC Television is making a fresh bid for local department store advertising. In the past, TV attempts to lure this market away from newspapers have not met with much success. Now, NBC is counting on its new program format, called Window, to goad retailers into exploring the possibilities of video.

Window shows will consist of 5-min. programs produced by NBC-owned stations. Local department stores will sponsor the shows, with only one sponsor for each presentation.

celebrity will present and demonstrate the sponsor's items in a relaxed, chatty fashion, spiced with noncommercial comments and information. The programs will be scattered throughout the day, adjacent to high-rated shows.

The programs will be in color where facilities are available. NBC sees color as one of the most potent factors in selling such merchandise as

clothing and fabrics.

The show will be priced in a way that NBC hopes will appeal to stores with local markets. For example a one-time-a-week Window over WRCA-TV in New York will cost a retailer \$325.

Window will hit TV screens on Feb. 13 in four markets-New York, Washington, Chicago, and Los Angeles. Philadelphia follows soon.

Store O.K.'s Fair Trade If GE Will Police Prices

The fair trade suit brought in a federal court by General Electric Co. against Boston Store in Milwaukee was settled last week on the heels of GE's recent reduction of fair trade prices on small appliances (BW-

Dec.31'55,p21).

The agreement, signed by attorneys for both sides and by Justice Robert E. Tehan, embodied a new development in fair trade enforcement. Under the terms of a consent decree. Boston Store agreed to abide by the reduced fair trade prices, which now are about at the level the store had been selling appliances. But GE promised to enforce its prices in a "vigorous and effective manner." Boston Store, one of the Federated Department Stores, can ask to reopen the case if it finds that GE is not policing prices effectively.

This part of the agreement is a recognition of the new tendency of the courts, as exemplified in recent decisions, to insist that a manufacturer effectively police his fair trade prices before he can force a store to maintain them. This principle emerged in the GE-Boston Store case last July when Judge Tehan refused to grant an injunction restraining Boston Store from price cutting because he found that GE did not enforce its prices properly (BW-

Jul. 30'55, p54).





CARPENTER'S CHOICE!

Important as his plumb-line is the pencil that sits on one ear. And the Dexter that keeps his pencils sharp and ready for use. For tacking jobs, a 4004 fits right into his work-apron pocket.

Of course—he selects
APSCO—AMERICA'S CHOICE



products inc.

Los Angeles, Calif, Rockford, III. Toronto, Canada



See Clues on page 182

THE MARKETS



In Britain, It's Worse

London stock market continues to slump, with investor's confidence shaken by auto production cutbacks, rumors of tighter money, and more restrictions on dividends.

U.S. investors and traders have been beset by collywobbles of the morale lately, but their worries have been harmless pets compared with the goblins haunting the British stock market (chart above).

Actually, Wall Street's clientele hasn't had things too bad, despite some uninspired price performances on the Big Board. Thus, Standard & Poor's daily index of industrial stock prices still perched early this week on a roost only 5% below the record high of mid-November. It was 9% above the end of June, and 26% above the 1954 closing.

Contrast this with the similar index compiled by London's Financial Times. This gauge early this week lay 15% below the 1955 high—recorded back in mid-July—11% below the end of June, and a mere 3% above the 1954 closing. The average was bad enough, but individual price drops in many erstwhile favorites were even more discouraging (tabulation, page 161).

• London Bellwether—In the old days, Wall Street used to keep a ferret eye on the British market. There was plenty to learn, for the Big Board was uncannily faithful in the way it followed the London market up and down. This was notably true during the boom of the 1920s, and in 1929, it was the London market that showed the first doubts that the world had arrived on the threshold of Utopia.

Of late, most U. S. market technicians have relaxed their vigilant gaze Londonward, though a handful still maintain the watch. The majority argue, and with some substance, that the world reshufflings of the past 20 years have robbed the London market of its weathervane value. Now, they say, it's the New York market that presages—and influences—events elsewhere.

 Market Pinch—The events in the British market since last summer have stemmed directly from the restrictive measures with which the government has sought to check inflation (BW— Oct.8'55,p156).

For a time, many Britons thought that the inflation would keep right on perking despite the government's restrictive policy. Those ideas have gradually faded. Last week, Austin Motor another boost in the bank (discount) Co. announced that it was putting its workers on a four-day week, due to a drop in orders. Other trades reported reductions in overtime work. All the news, added together, was interpreted as evidence that the credit squeeze had really begun to pinch. The immediate result was a sharp break in stock prices generally.

· Loss of Confidence-Last week's price weakness was not confined to stocks. "Gilts," the City's term for British Treasury issues, also felt the pressure. This, according to London sources, was due to a loss of confidence

in the Eden government.

This loss of faith, in turn, sprang from a sudden "Eden must go" outburst in the press-which even found milder cchoes on the Conservative side. As a neat touch of irony, much of the criticism came from the feeling that the government would not face up to any drastic cutting of its own spending.

Since the first break, prices have steadied on the London exchange. Yet neither investors nor traders were showing much confidence. Rumors-still unsubstantiated-were bouncing around that the government was considering rate, new restrictions on imports, and an even more frightening dividend freeze.

· No Change in Sight-No one is very hopeful of a quick change in the state of mind that is depressing prices. Mostly, people think that prices will be queasy until the market's customers can convince themselves on how long the government's disinflation policy will last. And they don't expect any clarification for some weeks.

Observers are increasingly trying to read the future through developments in the British auto industry, which has been a highly sensitive barometer for

the economy as a whole.

Incidentally, any reservations British investors may currently hold about their own motor industry don't apply to the American car makers. On Wednesday local securities faded into the background as traders awaited formal opening of dealing in the new Ford stock.

London brokers handling applications for the shares reported being swamped with orders. And as the market closed, a premium of \$3.50 was being paid for the new issue.

Some of London's Recent Losses

Oil	High (Prices in 27/10 60/- 133/1	Vearend n shillings and 25/9 43/10 119/4	23/- 39/9	At Yearend - 1% -27	Recently
De Havilland	27/10 60/- 133/1	25/9 43/10	23/- 39/9		-16%
De Havilland	27/10 60/- 133/1	25/9 43/10	23/- 39/9		-16%
Ford Motor	60/- 133/1	43/10	39/9		-16%
Ford Motor	133/1			-27	
Rolls Royce		119/4			-36
Oil	139/-		111/3	-10	-16
	139/-				
Delete Deserted	139/-	110/7	103/6	24	24
	mm /m	110/7	102/6	-21	-26
Burmah Oil	93/5	74/4	69/4	-20	-26
Irinidad Leasenoids	44/6	42/4	34/-	- 5	-23
Steel, Engineering					
Stewarts & Lloyds	79/9	74/6	69/-	- 7	-13
United Steel	50/-	48/6	46/10	- 3	- 7
Vickers	47/10	41/9	38/-	-13	-20
Textiles					
British Celanese	35/-	21/6	22/3	-39	-37
Courtaulds	55/3	42/9	40/4	-23	-27
Courtaines	33/3	42/3	40/4	-23	-21
Shops, Stores					
Great Universal Stores	56/9	40/3	39/4	-29	-31
Woolworth	71/9	63/4	60/3	-12	-16
Miscellaneous					
Associated Electric	97/6	84/3	75/6	-14	-23
Bowater Paper	55/9	54/3	49/6	- 2	-11
British American Tobacco	61/3	58/-	55/6	- 5	- 9
Dunlop Rubber	33/4	24/7	22/10	-27	-32
General Electric	81/-	63/6	61/-	-22	-25
Imperial Chemical	61/6	48/7	45/10	-21	-26
Imperial Tobacco	65/10	60/9	60/-	- 7	- 8
Monanto Chemicals	38/6	27/9	29/1	-28	-24
Unilever	80/4	73/3	70/-	- 9	-13
United Molasses	44/1	39/3	37/10	-11	-15
United Sua Betong	63/6	57/6	53/6	- 9	-11
			20/10		**
Mines					
De Beers	143/3	126/3	128/9	-12	-10
Prec State Geduld	126/3	74/7	72/-	-41	-43
British Treasury Bonds	(Price	es below in pou	nds)		
Consola 21/6	66 3/4	56 5/8	55	-15	-16
	88 9/16	76 7/8	74 1/2	-13	-16
	03 7/16	91 3/4	91 5/16	-11	-11
British Transport 3s, 1978-1988	88 7/16	73 3/4	71 1/2	-17	-19

PERSONNEL AUDIT AND APPRAISAL

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methods of measuring personnel
function are covered—employee intionnalize. Include reports, time function are covered—employee in-terviewing, company reports, ques-tionnaires. Includes techniques for aptitude and personality testing, performance rating, and others By Thomas J. Luck, Head Dept of Bus. Admin., College of Wil-liam and Many. 317 pages, 34 H-lus., \$6.00

Published!

FSYCHOLOGY OF INDUSTRIAL BEHAVIOR

A book that clarifies the human preblem of modern industry and presents the psychologist's solutions to them. Emphasis is on motives, satisfactions, and human relations. Points out how men are motivated to work in ways that are satisfying and productive, how frustrations and 100 saxieties can be reduced, how union-management relations can be improved, and many more. By Henry Clay Smith, Assoc Prof. of Psychology, Michigan State College, 425 pages, 26 illus., \$6.00

ORAL COMMUNICATION IN INDUSTRY

Helps the individual, group, or entire company use ord communication channels more effectively—for better relations within executive group and between front line supervisors and employees. Discusses specific situations such as conference, interviews, stiling, running meetings, and radio and television presentations. Each point illustrated with many camples. Especially helpful to men in, a mining for, executive positions. By B. C. Phillips, Wead, Department of Speech and Orame, Univ. of Conn. 250 pp., 33.75 280 pp., \$3.75

ADVERTISING COPY AND COMMUNICA-TIONS

Just Published! Discusses copywriting as part of overall marketing strategy, with therough coverage of how to plan creative advertising. Pro-vides guidance for writing



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Wall St. Talks . . .

. . . about top dividend payers . . . housing slowdown . . . banks, funds, and the market.

1955's biggest dollar-dividend payers:
(1) General Motors Corp.: \$596-million (largest individual dividend disbursement in corporate history); (2) AT&T: \$458.9-million; (3) Standard Oil (N. J.): \$344.8-million; (4) du Pont: \$318.8-million.

One expert's view of the current housing slump: "Credit restrictions have had some effect" in causing "the current housing slowdown," reports Thomas P. Coogan, president of Housing Securities, Inc., prominent mortgage clearinghouse, but "I would place tighter credit third in importance to saturation [of the market for homes] and high prices" (page 17).

A reason why you don't see more bank stocks listed: New York's First National City Bank says its directors have given no consideration to such a step because they feel fluctuations of the bank's shares on a public exchange might be harmful to it.

Pension funds dissatisfied with the stock market outlook, Streeters report, have become increasingly big buyers of the Treasury's 91-day bills. (This week's bill offering sold on a 2.49% yield basis.)

Something that's worrying William McChesney Martin, Jr., Federal Reserve Board chairman (and many Streeters, too): "... disquieting signs that people believe we are a lot smarter than we were in the 1920s."

C.I.T. Financial Corp. may soon sell \$100-million of long-term notes privately to institutional investors. The reason: Finance companies are finding it tough to sell short-term notes to banks and similar investors (BW—Jan.14'56,p128); and longer-term financing has become more attractive since short-term rates have been rising much more sharply than long-term borrowing costs.

Eventually, why not now? That's what the Street has been asking since it heard that Denver's International Trust Co. and First National Bank plan to merge "early in 1958." The probable answer: The deal awaits completion of a new bank building designed to house the combined banks, and its construction won't start until Mar. 1.

....IN STEP WITH THE PROGRESS OF DALLAS



Statler Hilton

The opening of the luxurious Statler Hilton on January 19th introduces an added symbol of Hilton hospitality in Texas. The twenty-one story, distinctive glass and aluminum Statler Hilton will contribute greatly to the importance of Dallas as the center of business, culture, fashion and entertainment in the booming Southwest, From the spacious lobby to the deluxe Skyline Suites, comfort is the keynote of this great new hotel. Each of

its 1,001 air-conditioned rooms offers a panoramic view of the city through broad picture windows. Superb convention facilities include one of the largest Grand Ballrooms in the country. In quality and perfection The Statler Hilton reflects the same high standards found at each of the famous Hilton Hotels at home and abroad.

Reservations at all Hilton and Statler Hotels can now be made by simply contacting an Assistant Manager of any hotel in the group.

Hilton Hotels

EXECUTIVE OFFICES COHRAD N. HILTON. PRESIDENT CHICAGO S. HLINO.

Business Investment Holds Key To Both Growth and Stability

What federal tax policy will best promote both growth and stability in the American economy? The Joint Economic Committee of Congress has been asking this crucially important question in public hearings. This editorial suggests one vital part of the answer.

The proposition advanced here is that-

Tax policy must encourage a continuing high level of business investment in new plant and equipment, because such investment makes a special contribution to both economic growth and economic stability.

Growth Needed for Security

We must have both growth and stability.

A vigorous economic growth is essential to our national security. As Congressman Wilbur D. Mills said in launching the Joint Committee's hearings, "The present complexion of world affairs places a premium upon strength and growth in our national economy." Growth is likewise a major ingredient of a healthy domestic economy. Growing enterprises and growing communities offer far more opportunities for satisfying careers than those which are not growing.

A reasonably stable economy, without violent

ups and downs, is also essential to our national welfare. Extravagant booms and their more or less inevitable result, severe depressions, waste labor and resources and cause great human misery. Both major political parties have accepted the obligation imposed by the Employment Act of 1946, that the federal government work to maintain high and stable employment.

There is general agreement that the key to economic growth is investment in new plant and equipment. Growth depends decisively on new facilities to increase production, and also to produce new and better products in new and better ways. At the same time, new plant investment provides employment for the important, and well-paid, one-fourth of our industrial workers who manufacture and build new production facilities. So if the process of business investment is kept on an even keel, the result is not only growth but also stability in a substantial sector of our economy.

But authorities disagree on the possibility of maintaining a high level of business investment for any great length of time. Some fear that it will lead to an excess of producing capacity and the glutting of markets, with recession or depression not far behind. The history of our country offers some basis for the fear that it is dangerous to maintain a very high level of business investment. There have been times when the economy has suffered under the weight of excess producing capacity. This fear, however, has been made obsolete by the recent course of our economic history which, in its earlier phases, nourished the fear.

The World Has Changed

Here are some of the major considerations, cited at the Joint Committee hearings, which support the conclusion that we not only can have a high level of business investment and economic stability but that we actually need a high level of such investment to assure stability.

- (1) Over the next 20 years our population is expected to increase by about one-third. But most of the population increase will come in age groups younger or older than normal working ages, and people will probably work fewer hours per week. Thus hours worked are not expected to increase more than 15%. Consequently, we must have a relatively large increase in the amount of production equipment per worker if our standard of living is not to suffer. This means a high level of new investment.
- (2) About half of our present business investment goes to replace worn-out equipment, rather than to expand capacity as was true during the early stages of our industrial development.
- (3) Thanks largely to the impact of organized research—for which we as a nation now spend about \$4 billion a year—a large share of capital investment now goes to provide new products and new processes, rather than to expand existing capacity.

These developments make it unlikely that we shall develop the burden of excess capacity that plagued the economy in earlier periods. Moreover, most capital investment plans are now made on a long-range basis. Companies are building facilities to anticipate their needs for several years ahead. This increase in long-range planning has reduced the disturbing effects of temporary shortages and excesses in producing capacity.

The record of recent years speaks for itself. Business spending for new plant and equipment in 1955 was over \$29 billion. This continued the high level of investment that has been maintained for the past ten years—a decade remarkable for both impressive growth and gratifying stability. A McGraw-Hill survey of preliminary plans for 1956 indicates another year of increasing investment, and expanding business activity.

Tax policy, to be successful, must consider this impressive contribution of business investment to both growth and stability.

Of course, the level of investment depends on many factors other than federal tax policy. The degree of business confidence is important. So is the strength of consumer markets. So is the attitude of organized labor toward the use of more efficient machinery. But tax policy is a crucially important factor. And it is becoming more so with new developments in our changing economy. These developments indicate that tax policy must be geared to foster a high level of business investment, if the dual objectives of economic growth and economic stability are surely to be attained.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments that are of particular concern to the business and professional community served by our industrial and technical publications.

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Donald C McGraw

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PERSONAL BUSINESS

BUSINESS WEEK JAN. 21, 1956



More American tourists will holiday in the Caribbean area this winter than ever before. If you want to be one of them before the season closes in April, make your reservations now—even though accommodations on the islands have expanded tremendously in the past few years.

Then, be sure you do these things: (1) Before leaving, register with customs any expensive foreign cameras, watches, or binoculars you take with you; (2) take some proof of U.S. citizenship; (3) have a certificate proving you have been immunized against smallpox within the last three years; (4) if you plan to rent a car, take your state driver's license (or an International Driver's License) and three passport-sized photos.

You'll need only summer clothes. Caribbean temperatures are usually in the 80s during the day, 10 to 15 deg. less at night. But pack a light topcoat and sweater if you plan to go into the mountains. There's no need for rainwear; a dinner jacket is nice but not necessary.

Whatever you take, keep your baggage light. There will be plenty of things you will want to buy and bring back. Light baggage is smart traveling in any case. It's vital if you fly. One reason: Your purchases won't be such bargains if you have to pay for excess weight on the return trip.

Baggage allowance on first-class air trips to the Caribbean is 66 lb. per person (tourist: 44 lb.). Anything over this will cost you around 70¢ per lb.—whether you go tourist or first-class.

Figure a first-class plane ticket to cost you around \$250 round trip; tourist-class runs roughly between 20% and 30% less. By ship, figure \$20 to \$35 a day per person, depending on type of accommodations.

First-class hotel prices on most of the popular islands range from \$35 to \$50 a day per couple, American Plan (three meals a day). This includes spots like Port-au-Prince, Ciudad Trujillo, Kingston, and San Juan. There are plenty of modern hotels in such areas to choose from.

You can live on a less lavish scale in many pleasant and comfortable hotels, for \$18 to \$30 a day for two with meals. And on some of the smaller, less publicized islands, such as Dominica in the British Windward Island group, rates at the best hotels are as low as \$10 a day for two.

In Haiti, Jamaica, Ciudad Trujillo, Cuba, Curacoa, U. S. money circulates freely. And there's no need to change it to local currency. But in most of the British and French islands you may have to change it.

Tip 10% to 15% of your bill (a little higher in Cuba), and for the same services as you do at home—bellboy, waiter, doorman, chambermaids.

Watch out for taxi fares, one area where American tourists are often played for suckers. Strike a price with the driver in advance. Do some haggling over it; that's the island way of doing business. And often taxi fares double after midnight.

The Caribbean is noted for bargains in goods, and each island more or less has a specialty. Thus in Jamaica, English tweeds, cashmere, china, and the like usually sell for 50% to 60% of their price in the U. S. It's native rum (\$1 a bottle) and native-made mahogany products in Haiti; tortoise shell in the Dominican Republic; alligator products in Cuba.

You'll note in Jamaica some "in bond" shops. This means only that these shops can sell foreign imports 100% tax-free to tourists only. How-

PERSONAL BUSINESS (Continued)

BUSINESS WEEK JAN. 21, 1956

ever, you can't carry the merchandise out of the store; it must be delivered to your ship or plane when you leave the island.

Here are a couple of tips on customs: Each person can bring in \$200 worth of merchandise duty-free if he's out of the U. S. two days; \$500 worth if he's out 12 days. But you can bring in only one gallon of alcoholic beverages (except for dry states) and 100 cigars.

Pack all your purchases together, and keep all sales slips together. Make out your customs declaration in advance. Declare all items that are being sent later to avoid paying duty when they come.

Your bookstore has some excellent adventure books. Here are some of the best:

- Nothing Too Good for a Cowboy, by Richmond P. Hobson, Jr. (Lippincott; \$3.75), is the true and dramatic story of a present-day frontier in British Columbia, where cattle drives take place in 60-below-zero weather.
- The Desert and the Stars, by Flora Armitage (Holt; \$4), is an objective and frank biography of Lawrence of Arabia.
- After You, Marco Polo, by Jean Bowie Shor (McGraw-Hill; \$4.50). The report of a young American couple's journey following the footsteps Marco Polo took from Venice to Peiping seven centuries ago.
- Bull Fever, by Kenneth Tynan (Harper; \$5), will be fascinating reading for anyone who knows something about bullfighting.
- Two strikingly different views on the conquest of Everest by the men who did the conquering: Tiger of the Snows, by Tenzing Norgay, with James Ramsey Ullman (Putnam; \$4.50), notable for its humility; and High Adventure, by Sir Edmund Hillary (Dutton; \$4.50).

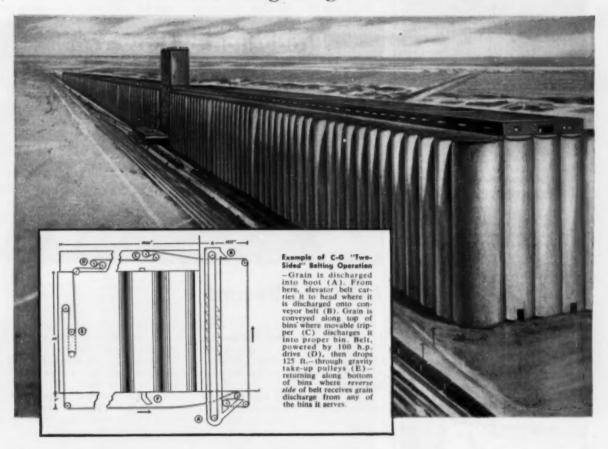
Four books on man's struggle with the sea are well-worth reading:

- A Night to Remember, by Walter Lord (Holt; \$3.50), is the most complete and exciting account yet of the sinking of the Titanic in 1912.
- Boon Island, by Kenneth Roberts (Doubleday; \$3.75), tells in novel form the horror-filled story of the wreck of the Nottingham Galley on a small rock off the coast of Maine in the winter of 1710, and how most of its crew of 14 survived nearly four weeks of nature's cruelest tortures.
- Seafights and Shipwrecks (Hanover House; \$3.95). Hanson W. Baldwin, military editor of the New York Times, has collected 18 stories of famous seafaring events.
- Men From the Sea, by K. M. Wallenius (Oxford; \$4), tells five stories of the rugged life at sea within the Arctic Circle.

Chances of your federal income-tax return being thoroughly audited are much greater this year than before. Since 1953, Internal Revenue Service has added nearly 4,000 agents to help out on the job. Moral: Make out your return from adequate records.

You may be able to improve your bowling score with a new grip for fingers that can be put into the holes of the ball. It's an adhesive-backed, thin strip of rubber fastened with normal finger pressure. Its better traction increases control. Available at some bowling alleys.

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This C-G Grain Company Elevator (Wichita, Kansas) has a capacity of approximately 20 million bushels. But it's not only the capacity that impresses grainmen; it's the cost-saving, "two-sided" efficiency with which the grain is handled.

An ultra-modern belting installation—entirely equipped with "U.S." belting—makes it possible to unload incoming cars, fill storage bins, unload other bins, load outgoing cars and "turn" grain to aerate it—all in simultaneous operations—each not interfering with the other. (See diagram above.)

In all, over 12,000 feet of "U.S." belting is used. U.S. Rubber belting engineers designed and built the belt for this revolutionary system, working with the engineers of the grain elevator builder* and the engineers of the conveyor

equipment builder. This is the widely-known "U.S." Three-Way-Engineering. It's a system that always means savings in money and time.

The belts in this biggest of all grain elevators are of the famous "U. S." cotton-nylon construction. This development increases the tensile strength up to one-third for the same number of plies of standard duck...gives greater troughability to conveyor belts and better bolt holding ability to elevator belts.

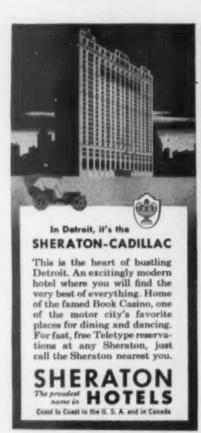
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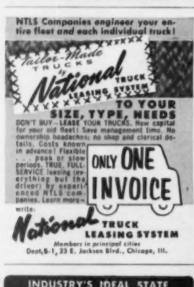
*Designed by Chalmes & Borton



Mechanical Goods Division

United States Rubber

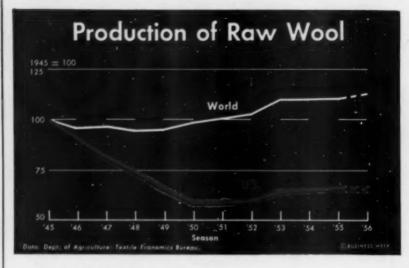






WHEN BUSINESS MEN WANT BUSINESS NEWS THEY TURN TO BUSINESS WEEK

CHARTS OF THE WEEK

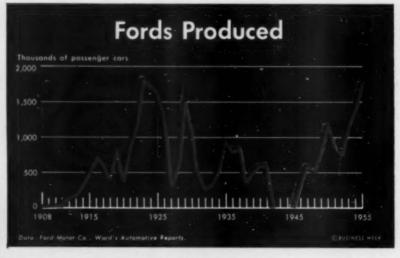


A World Record

World production of raw wool in the 1955-56 season is expected to beat the 1954-55 record output by 2%. Textile Organon estimates world production will weigh in at 4,475-million lb., greasy basis.

But U. S. production will fall to 273million lb. from the previous season's 276-million lb. This would reverse the upturn in raw wool production that began in 1950. U. S. output had dropped sharply from 412-million lb. in 1945 to 248-million lb. in 1950.

Australian output, which has had a fairly steady rise over the years, is expected to climb about 3%. New Zealand, which is assuming importance as a wool producer and now accounts for 10.3% of the world total, likewise is expected to gain this season.



Model "T" Still Champ

As impressive as the total of 1,764,-524 Fords turned out by Ford Motor Co. in 1955 is, it doesn't quite come up to the pace set by the Model "T". The fabled Model "T" still holds the company's all-time production record for a single year-1,817,891 in 1923. Ford's 1923 production counted up to just about half of all passenger cars produced in the U.S. that year.

But 1955 still was a year in which many records were shattered in the auto industry. Ford's passenger car production totaled 2,240,661 (Fords, Mercurys, Lincolns, Continentals combined). That was 23% more cars than the company produced in the record year of 1923, but output of the Ford car lagged 3% behind the Model "T".

In the last quarter century the Ford

car's fortunes have moved up and down. The 50% share of the market it enjoyed in 1923 dwindled to 12% in 1927. It climbed up again in 1929 and 1930, rising to over 40% of the industry auto output in 1930. But by 1932, when the V-8 made its bow, Ford's slice of the industry total shrank to 25%. It inched up to 29% in 1935, then lost ground again. It was not until 1954 that the Ford really regained its old share of car output, accounting for 25% of the total.

Enrollment in Schools Millions of persons 5 to 29 years of age 10-20 14-17 20 1950. 1951. 1952 1953 1954 1955. Data Dept. of Commerce, Bureau of the Centus.

Student Ranks Keep Growing

A recent report of the Census Bureau covering school enrollment at the beginning of the current school year underscores the need for additional school construction. At the start of the 1955-56 school year, there were over 37-million persons 5 to 29 years old enrolled in schools or colleges. That's 3.7% more than at the start of the last school year and a 23.4% increase over 1950.

Some 26.5-million children from 5 to 13 years old were enrolled in schools in October, 1955. (This group takes in children born during World War II and up until 1950.) The group was 28.2% larger at the beginning of the present school year than in 1950. And their numbers swelled 4.5% from one year ago.

Five- and six-year olds showed an even more impressive increase over the five years—35.9%. This indicates that 7 to 13-year group, with a 26.3% greater enrollment in 1955 than in 1950, will increase further. The high birth rate in the last five years will make for continued gains in the 5 to 6-year group.



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Milk Industry: Its Hows and Whys

Few consumers understand the complexities of price and production control. They ask:

Who sets prices, and why?

How does the farmer come out in the deal? Do distributors really compete?

- Legislation on marketing orders and, even more, on resale pricing is perpetually under debate.
- Meanwhile, federal and state agencies walk a tightrope in reconciling the conflicting interests of farmers, distributors, and consumers.

Dairymen in New Jersey and New York currently are having a whale of a fight over the question of federal price controls on milk produced in New

· The Issue-New Jersey dairy farmers now are under state control, but they would prefer to come under federal control. Farmers supplying the New York City area are regulated by a federal marketing order. And they would like to see this same order govern milk production in New Jersey. But the Jersey dairymen want a separate federal marketing order to cover their own state.

To understand why the two types of federal control should make such a difference-and it's a big difference, running into millions of dollars in annual dairy income-you have to know something about the complicated economic and political factors affecting the production and marketing of milk.

· Mass Confusion-These factors, of course, affect dairymen and milk producers in the whole country, not just in the New York-New Jersey area. And so you find milk disputes elsewhere, too.

In fact, there is probably no other basic American industry that has spent quite so much time in court, that has such a long history of bitterness and resentment, and about whose operations so many people are confused. It's a safe bet that about half of the 1-million farmers who produce milk for drinking don't fully understand how they are paid. And almost all the 35-million or more families who consume milk daily are totally in the dark as to what determines the price of a bottle of milk. One result is the obscure feeling of millions of people that somehow they're being

I. Fluid Milk

A long time ago, milk was just milk. Now there are really two different kinds of milk, and two different milk-producing industries.

One kind is fluid milk-milk intended for drinking. Farmers who produce fluid milk are located all over the country, but always near the areas they serve

The other kind is manufacturing milk -milk intended to be made into butter, cheese, and other dairy products.

Of the two, fluid milk is much more expensive to produce. For one thing, sanitary requirements are much higher.

For another, fluid milk has to be produced near the centers of population, where land costs are much higher. And it's just not possible to gravitate to the wide open spaces and the finest pastures. Some fluid milk producing areas-in New York State, for example-are highly efficient. Others are not-but they stay where they are anyway, just because there's a big city nearby.

Since fluid milk costs more to produce, it carries a higher price tag. So for the farmer, the most valuable use of milk is in fluid form.

· Pricing-It is at this point-pricingthat you leave the realm of pure eco-nomics and get into politics. The price of a very large proportion-some say nearly all-of the milk that's produced for fluid use is influenced not by direct bargaining between dairy farmer and distributor but by government action.

The chief influence on fluid milk prices is the federal government. It exerts its influence through federal milk marketing orders that set minimum prices to be paid to the farmers. Currently, federal milk marketing orders set prices in 71 areas around the country -covering well over a third of total fluid milk production.

• The Formula-But the influence of the federal government goes further than that. The main reason for this expanded influence is that milk prices in any particular area have to be roughly equal to prices in the surrounding areas.

If prices are much higher, the area will get a flood of milk from surrounding areas: If they're much lower, the area will be left with short supplies.

In addition to the federal government, a third of the states also set minimum producer prices for milk, usually in areas not covered by federal pricing. But, while the federal government, in each of its areas, sets its price by formula-a specific set of factors to be considered, with a specific weight attached to each-the states, on the

whole, do not.

State milk control laws tend to give their milk administrator a list of general factors he should consider-such as the cost of producing milk, reasonable returns to producers, consumer purchasing power, keeping a balance between supply and demand. After that, it's up to him to balance these factors and come up with a price-by administrative decision. What he comes up with, of necessity, is often a price very close to the federal price (if there is one) in a nearby major market.

II. Federal Tactic

How, then, do the federal marketing orders go about setting fluid milk prices? The system varies somewhat in each area, but nowhere is the decision easy.

One of the biggest problems in trying to set price levels is that milk production is highly seasonal. Production in the spring months always runs a great deal higher than in the fall and winter Yet consumption remains months. quite stable throughout the year. And fluid milk can't be stored.

Another problem is that, while output of milk is very hard to change on purpose, it can change quite quickly by accident. A sudden drought or a heavy rainfall in a local area can make a substantial and unpredictable difference in that area's output of milk.

· Meeting the Problem-All this means that (1) prices have to be set at a level that will bring out an adequate supply of milk in the low production months, and (2) "adequate" must be defined as enough to fill consumption needs, plus a reserve or margin for safety-between 10% and 20%.

This, in turn, means that there is always a "surplus" of fluid milk. If production should come through about as expected, there will be, say, a 10% surplus in the low production months. But even if production should drop unexpectedly, so that there's no reserve in the low production months, a large part of the milk that comes through in the flush season will be surplus.

· Using the Surplus-This surplus milk

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And it is at this point—in the manufacture of surplus milk—that the two main divisions of the milk industry—manufacturing and fluid—meet.

III. Playing Two Markets

All federal marketing orders set a price for fluid milk, monthly, by formula. Formula pricing has two advantages. For one thing, it's fast—prices can be changed quickly to meet changing conditions. For another, it has a more objective sound and is less likely to depend on the whim, or the political pressure, of the moment.

The formulas themselves differ in detail among the various markets, but they all fall into one of two general types. The most widely used, by far, is the "basic" type formula that, in effect, sets the price of fluid milk at the current value of manufacturing milk (or the value of manufactured products) plus a differential. The other is the "economic" type of formula, which bases fluid milk prices on indicators of certain economic conditions, such as wholesale prices, consumer income in the area, or the costs involved in producing milk.

• Milk Pool—But setting the fluid milk price is only part of the job. You can't set a fluid milk price and insist that all fluid milk producers be paid at that price, for the simple reason that not all the milk that's produced for fluid purposes is used that way. So all federal and state milk orders use a system of classified pricing.

This means that different minimum prices are set for the milk that's used as fluid and the milk that's used in manufacturing. (The manufacturing price usually corresponds to the market value of manufacturing milk.)

At the end of every month, milk dealers or distributors report on how much milk they've used in fluid form, how much they've sold for manufacturing (or used in their own manufacturing). Under a marketwide pool, which is the system most commonly used, the milk administrator adds all these reports together and finds out just what proportion of the milk in his market went for each use.

• Blended Price—What he comes up with is an average or "blended" price somewhere between the fluid and the manufacturing milk prices. If a larger proportion of the milk that month was used in fluid form, the blend price will move up toward the fluid price. If more was used in manufacturing, the price will move down.

This blended price (adjusted, usually,

for the buttertat content of the milk and the farmer's distance from the market) is what the farmer actually gets. Every farmer within that milkshed gets the same price, regardless of how his own specific milk was used. This means, of course, that every dealer also pays the same blended price.

• Last Step-Then there is one final

step.

Under a marketwide pool, an adjustment fund is set up in each marketing area. Dealers who sold a higher proportion than average for fluid use pay into the fund; dealers who sold a lower proportion than average get money back. It all comes out even.

The dealer, or "individual handler" pool—used in a few federal and many state-controlled markets—works much the same way, except that the blended price, instead of being figured for the whole market, is figured for each dealer separately. Each dealer's blend depends on the proportions of milk coming from the controlled area that he himself has sold for fluid and manufacturing use.

IV. Interstate Fracas

These are the mechanics of the milk marketing orders that set milk prices. In practice, since lots of money is involved, this is anything but a mechanical and cold-blooded operation. The New York-New Jersey fight (the New York marketing area alone is the biggest in the country) is a good example of what can happen in a particular situation.

Insufficient Supply—New Jersey produces only about half of its milk needs, on a year-round basis; the rest comes mainly from New York. Right now, producer prices for milk are under state control, with classified pricing and an "individual handler" type of pool

arrangement.

But the system isn't working. Here's why: Under an individual handler pool, each dealer has to keep his price to the farmer as high as his competitor's price or his sources of supply will dry up. A dealer does this by taking as little surplus milk from farmers as possible; if he can write his contracts with farmers so that even in the flush months he will only take as much as he needs for fluid use, the blend price he pays to the farmer will stay at the high fluid with refer

Come the low production months, Jersey dealers cross the Hudson and fill out their needs. They buy from New York farmers who are not subject to federal control because they don't supply the New York City area, paying a small premium over what the New York blend price happens to be. Dealers can also buy through the New York City marketing pool, in which case the premium on out-of-state shipments is



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20¢ a hundredweight. In either case, the price the dealer has paid is well below the fluid milk rate; then he sells the milk in Jersey at the fluid milk price.

• New York Protest—Spokesmen for New York farmers cry "unfair"; they say that the milksheds—the normal supply area—for New York and New Jersey actually overlap, but that New York is being forced to carry the surplus for the whole region. In 1952, they tried hard to bring New Jersey in under the federal order for New York but weren't successful. New Jersey dairymen fought the move right down the line.

With a much higher percentage of Jersey milk going for fluid use, Jersey farmers get higher prices than those in New York. If they came under the New York order, they'd have to share the surplus—and their prices would come down.

Jersey farmers themselves want a federal order—but a separate one from the New York order. They need it now because New York milk is driving New Jersey milk out of its own market. Last February New Jersey stopped fixing retail milk prices. This caused the dealers to compete with one another by cutting at retail. So to protect their own profit margin they began to make even bigger purchases of milk in New York where prices were lower.

· State Unable to Act-As matters stand, the New Jersey Office of Milk Industry can't do anything about the price of incoming milk, because it can't control interstate shipments. A separate federal order for New Jersey, however, would be set up in such a way that Jersey dealers would end up paying as much for their New York milk as they would if they had bought it in New Jersey. This is what New Jersey farmers want. But they, their spokesmen, New Jersey's Gov. Meyner, and both houses of the legislature are unanimously and emphatically opposed to coming under the New York order. which would mean lower milk prices for the producer.

However, once the federal government is called in, it's up to the Secretary of Agriculture to decide on the most feasible system. A decision is expected soon—with the outcome depending as much on politics as on economics.

V. Public Interest

The complicated New York-New Jersey situation is just one example of how involved regulating milk prices can get. This raises the question: Why federal marketing orders at all—or state either, for that matter? What's so special about milk?

Most people who have studied the

problem long and closely feel that there are inherent forces for chaos in the production of milk. And, aside from the fact that milk is such an important income-producer for farmers, it's such an important health food for the public at large that chaos simply can't be allowed to prevail.

· Competitive-Part of the problem is that conditions in the producing end of the business are almost too ideally competitive. The number of farmers supplying a specific market is usually very large compared with that market. The number of dealers or distributors is, of course, much smaller than the number of farmers, but still there are usually enough dealers in a market so that they, too, compete actively.

Add to this the highly seasonal nature of milk production and the everpresent surpluses. Then you begin to

see the possibilities.

In an unregulated market, dealers compete by lowering prices. In milk, before regulation, this lowering of prices periodically took the form of drastic price wars. Dealers could, and did, cut and undercut milk prices, yet still protect their own margins to a large extent by simply passing the price drop back to the farmer.

• The Farmer's Side-Milk production is an expensive business to get into. Farmers aren't likely to get in-or outwithout sober thought. At the same time, the farmer wants an income from his milk all year round, not just in the low production months when he can sell all he can persuade his cows to yield up. In the past, when prices got low enough, farmers did get out of the business. Then shortages developed,

and the public got hurt.

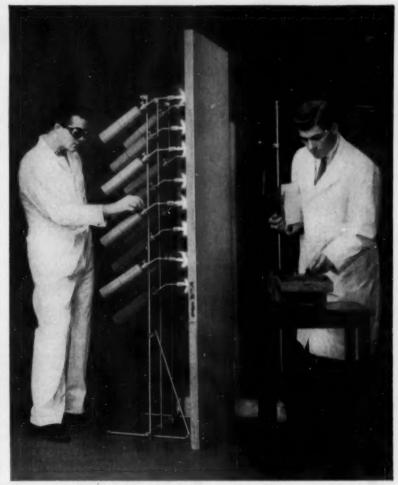
The farmers' first attempt to deal with their problem was to try to bring their own bargaining power up to match that of the dealers. The period after World War I saw the blossoming of dairy farmers' cooperatives and other kinds of producer organizations. Nearly all fluid milk producers still belong to

these organizations.

In an attempt to find an orderly marketing procedure for the surplus, the cooperatives started the classified pricing system (one price for the milk actually used as fluid, another for the milk used in manufacturing-with the farmer getting a blended price somewhere between the two).

· Nonconformers-The cooperatives brought some improvement in conditions, but one trouble was that the system put a premium on being a lone wolf.

Distributors who dealt with the cooperatives paid a blended price that varied with how much milk they sold as fluid. But the distributor who dealt with an individual farmer could pay him a price slightly higher than the



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blend, and buy from him only as much as he could sell as fluid.

This way, the distributor was buying at the blended price, selling at the fluid. By the same token, the noncooperating farmer was getting slightly more than the blended price and letting the cooperatives carry the burden of the surplus. (On a nationwide basis, this was essentially the same sort of thing that's going on, on a much smaller scale in New Jersey, now.)

Then, with the depression, the whole thing broke down. Milk prices to the farmer went down to the equivalent of 13¢ per qt., and bitterness reached explosive pitch. Sporadic milk "strikes" developed, with farmers dumping their milk on the streets rather than sell it at the prices they were getting.

VI. Enter Government

It was at this point, in the midst of chaos, that state and federal governments stepped in.

New York State led off with a milk control law early in 1933; one by one, other states followed suit. In all, 28 states have, at one time or another, tried to control milk prices; more than half of these still have milk control laws. The federal government was on the scene almost from the beginning.

· Criticism-Actually, you'll find few people now who will say right out loud that fixing the farmer's price for milk is, in itself, a bad thing.

What critics do say is that the price is almost always fixed too high-that it encourages over-production at the same time that it discourages consumption. And most agree that in this respect the states, being more subject to immediate political pressure from farmers, are far worse offenders than the federal government.

• Price Effects-The thorniest problem in setting milk prices is in the relationship of price and supply. The federal marketing orders operate on the premise that price regulates supply, yet finding the price that will lower supply by the right amount is no easy job.

Under marketing orders, the price the farmer gets goes down as supply goes up because:

· As supply goes up, a larger proportion of the total is surplus and, therefore, used in manufacturing. This lowers the blended price.

· In most federal markets, the fluid milk price is equal to the manufacturing milk price plus a differential. As more of the surplus goes into manufacturing milk and depresses the price of that milk, the fluid milk price drops.

· Most federal marketing orders also contain a "supply-demand adjuster" that lowers the price of fluid milk as the surplus goes up.

· Other Factors-However, milk out-

put depends on many other things besides price, such as what's happening to alternative kinds of farming, the price of feed, and the price of beef.

VII. Resale Pricing

Most experts will agree that producer price fixing is, at the very least, a necessary evil. But their agreement goes no

Of the states that fix producer prices, more than half also fix "resale" (wholesale and retail) prices-and nearly every one of these states has a long history of controversy on the subject. In nearly every one of them, resale pricing is still under strong attack.

· Dealer Price Wars-When the milk control laws were first passed, a big part of the chaos in milk seemed to stem as much from price wars at the dealers' end as it did from the farmers' end. The way to deal with the situation, it was thought, was to control wholesale and retail prices-so that dealers couldn't fight with price-as well as to control producer prices.

When the federal government came on the scene, it too tried to set resale prices. But it got out of this field in less than a year, largely because of the difficulties of administering the law.

• Guarding Margins-Resale prices are set on the basis of costs. Therefore, they protect the margins of the milk wholesaler and retailer (and, in most cases, protect them generously). However-and this is one of the chief criticisms-the prices are based, at least in part, on the costs of the weakest and least efficient distributors in the area.

This reduces incentives to cut the

costs of marketing milk

• Store Delivery-One of the stormiest problems in the field of resale pricing

the store differential.

It costs substantially less to deliver milk in quantity to supermarkets than it does to deliver it to homes. In states with free wholesale and retail markets, the price difference to the consumer usually settles at around 3¢ to 4¢ a quart. Yet in some states that fix resale prices there is no price difference to the consumer at all; in others the differential is limited to 1¢ or 1¢

· Labor Attitude-Nothing in milk is simple. The problem of the store differential is complicated by the attitude of milk drivers' unions. The unions, quite understandably, want to protect their members' jobs by slowing the trend to store-buying of milk.

Their main weapon in doing this is applying pressure to keep the store differential as small as possible. In a few cases they've been successful to the point where it costs more to buy milk from stores than to have it delivered at home. END



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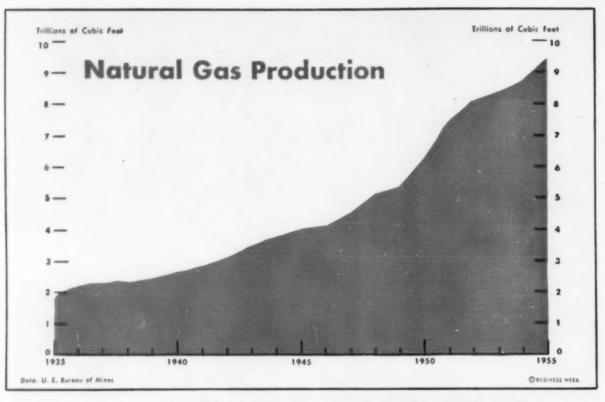
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How to Split Up a Rich Market

Year by year, natural gas becomes a more valuable commodity for the Gulf states, where major production is centered. Production (chart) keeps growing; in 1955, it more than doubled the 1947 volume. Prices, too, are in a long-term rise.

As the value of the resource has increased, so has demand of producers for an effective system of regulating production, as oil is regulated. This month, two states have put regulations into effect:

 Louisiana inaugurated a statewide system fixing allowable production on a field-by-field basis.

Texas put teeth in its prorationing system for two of its gas fields as, in the words of Texas Railroad Commission Chmn. W. J. Murray, Jr., "a significant experimental step" toward regulating all gas production.

• Reins on Oil—States have been prorationing oil since the 1930s. In Texas, for example, the Railroad Commission each month decides on the potential total demand for Texas crude oil in the coming month. In doing this, it considers various market forecasts, as well as the oil refiners' "nominations" (estimates of how much they will need). Then the commission allocates production, enough to meet this demand, among the various oil wells in the state.

Each well gets an "allowable" production quota.

Oil prorationing went into effect initially as a conservation measure. With the discovery of the East Texas oil field in 1930, millions of barrels of cheaply produced oil were thrown on a market that had no use for it. Since many wells tapped a common reservoir, producers rushed to get their oil out before a neighboring well drained it out from under them.

 Price Effect—While oil prorationing went into effect for the sake of conservation, it has had a big effect on prices. Proponents of the system say that prorationing "stabilizes" prices, critics say it keeps prices above their "natural" level. In any event, the various state orders limit total oil supply approximately to total demand; longrun surpluses are never allowed to develop.

In gas, too, prorationing would have a big effect on prices, though not quite in the same way. Most gas is sold on the basis of long-term contracts with pipelines, who take only what they need to fulfill their contracts with distributors. Thus, overproduction is not so much a factor in gas.

In gas, prices vary widely; often there are big differences among wells in the same field. Sometimes when ownership of a well is split, there may even be different prices for gas coming from the same well.

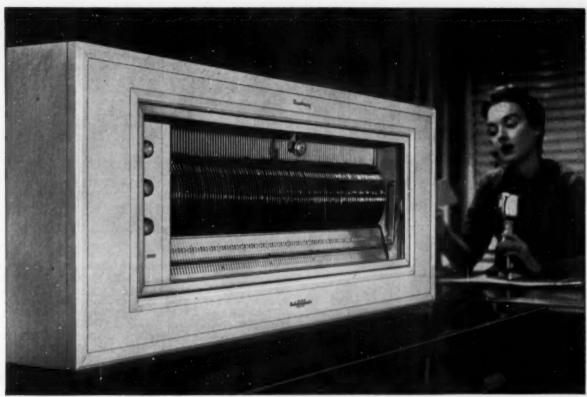
 Narrow Market—Except in the larger fields, there is usually a single customer for the gas produced in each field.
 Even when there's more than one customer, a pipeline still has to be built before gas from any well can be used.

Producers say that this leaves them at the mercy of the pipelines, that a buyer can take from the lower-priced wells in a field and leave the others with a reduced market or none at

Worse still, a well that's not connected to a line may find its gas being drained out from under it. With prorationing in effect, a pipeline could only take a certain allowable amount from each well, and would have to strike a bargain with other producers to get the rest of its needs. Prices, on the average, would rise.

 Hard to Apply—Though natural gas producers would like to see the same kind of regulation for gas as exists for oil, true statewide prorationing will be a long time coming. There are many differences between the two fuels that make it impossible to apply oil prorationing directly to gas.

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where. In addition, a web of pipelines connects the various wells and fields, and makes it easy to move oil from one place to another. So, if a crude oil buyer finds he needs more than his regular sources can produce under their allowables for the month, he can go to another field or swap with another buyer who may have more than he needs.

Gas, on the other hand, can only move by pipeline; it becomes usable only when a pipeline company lays a line to a particular well or group of wells. Interconnecting lines and storage places are rare. The lack of flexibility in transportation is the biggest hindrance to statewide prorationing; buyers can't switch readily to new sources to fill out their needs.

Scarcity of interconnecting pipelines alone makes statewide gas prorationing impossible now. In fact, Texas law permits prorationing only on a field-byfield basis.

· Gas Rationing-Texas has had prorationing in effect in about 300 gas fields for some time, but the system has never been effective. This is largely because the allowables are based solely on nominations by producers. Each producer estimates the capacity and market for his own well; their estimates within a field are added together. This becomes the allowable for the field. Each well is then assigned a production allowance based on the relation of its capacity to the total capacity of the field.

The great temptation is for producers to overestimate, so as to be able to produce more. Where a pipeline also owns a producing well, it will try to get as much of its gas as possible from its own well. On the other hand, a producer may prefer not to sell his gas at all, possibly to wait for higher prices. This then reduces the allowable for the whole field, hence the allowable for each well.

· Over and Under-The Texas prorationing orders include an over-and-under production formula. A well may produce more than its rated share for six months, if it then produces as much less over the next six months. If it hasn't repaid its extra output at the end of six months, the well is closed down until it does. Similarly, in case of underproduction, a producer gets an extra six months to make up his quota.

The trouble is that, since the nominations are highly inaccurate to start with, the accounting of over-and-under production often gets in such a snarl that the commission is forced periodically to rub the slate clean and start all over.

• Two Texas Fields-In its two new pacesetting orders-one for the Alco-Mag field, near Houston, the other for the Waskom field, in Harrison County -the Texas Railroad Commission is trying to break away from this difficulty. In both orders, the commission for the first time abandons sole reliance on producer nominations; it will itself determine market demand, as it does in oil. Beyond that, the two orders show different aspects of what a really effective prorationing system can mean.

· Price Control-The Alco-Mag order highlights the price question. The field has only one buyer, Industrial Gas Supply Corp. Industrial also owns about half the producing wells in the fields; the other half are owned by Russell Maguire.

Last summer, Industrial asked the commission for permission to supply all its needs from its own wells. The company said it couldn't come to terms with Maguire on a price for his gas.

The commission ruled that the total demand for the field's gas (in this case, only Industrial's needs) has to be shared by all the wells in the field. This means that Industrial will have to pay Maguire a price agreeable to him or get part of its gas from another field. Chances are, Industrial will find it cheaper to raise its offer to Maguire than to build lines to other fields.

According to Murray, the commission's chairman, the Alco-Mag order is based on a "doctrine of equal coercion." The order includes an over-and-under production formula that would cancel quotas that lie unused for more than a year. This is intended to keep a producer-such as Maguire-from arbitrarily refusing to accept a reasonable price while saving up unused quotas.

· Market Control-On the other hand, the Waskom field has many producers and several buyers. The main feature of this order-besides, again, the fact that the commission itself will decide on the total market-is the question of swapping among buyers and the need for building interconnecting pipelines. Some buvers in the Waskom field are connected to more gas than they can use, while others-under strict prorationing-will not get enough to meet their full demand. The only way to give each well its phase of the market is for the buyers to build interconnecting lines and swap gas.

· Louisiana-While Texas is experimenting with control of individual fields. Louisiana has made a sweeping move with its strict statewide prorationing program. Louisiana's order includes nearly all the fields in the state, but prorationing will still be on a fieldby-field basis, with the state's Dept. of Conservation determining the demand

for gas from each field.

However, troubles began to develop at the first prorationing hearing last month, and it may be some time before Louisiana's new system is working smoothly. END

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Agency—Kudner Agency, Inc92-93
BRANITE CITY STEEL CO
Agency—Gardner Adv. Co. THE EDWIN F. GUTH CO
HARPER & BROS 70
Agency Denhard & Stewart, Inc. HARTWELL AVIATION SUPPLY CO 82
HARTWELL AVIATION SUPPLY CO 82 Agency—The McCarty Co. THE E. F. HAUSERMAN CO
IME E. F. HAUSERMAN CO. 129 Agency—Meldrum & Fersmith, Inc. IME MEYER CORP. 140 Augnery—Frank C. Jacobi HILTON HOTELS CORP. 163
Agency—Frank C. Jacobi HILTON HOTELS CORP. 163
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Agency-Albert Frank-Quenther Law, Inc.
Agency—Ross Roy, Inc
Agency Marschalk & Pratt Co., Inc 28
Agency Marschalk & Frat Co., Inc. NTERNATIONAL STEEL CO. 66 Agency Keller-Crescent Co. JEFFREY MFG. CO. 173
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LUMMUS CO
Agency—The Charles Brunelle Co. LUMMUS CO. 75 Agency—G. M. Basford Co. 76 Agency—G. M. Basford Co. 67 Agency—The Altkin-Kynett Co. 67 Agency—The Altkin-Kynett Co. 94 MARINE MIDLAND CORP. 94
MARINE MIDLAND CORP
MARINE MIDLAND CORP
MASSACHUSETTS INVESTORS TRUST160 Acency—Dorenus & Co. MASTER ELECTRIC COMPANY
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Agency—Bo Bernstein & Co., Inc. SLYVANIA ELECTRIC PRODUCTS, INC 13
Agency J. Walter Thompson Co.
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MFG. CO48-49
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Agency—Arthur B. Mogge, Inc.
Agency Ketchum, MacLeod & Grove, Inc. 47
WESTINGHOUSE ELECTRIC CORP.
WHITING CORP. 87 Agency Waldie & Briggs, Inc.
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A Way Out of the Farm Policy Trap

The farm program that Pres. Eisenhower sent to Congress last week looks like the best prescription that anyone has yet compounded for that puzzling ailment of the U.S. economy-languishing agriculture in

the midst of general prosperity.

Admittedly, the Administration's program is a compromise. But that is its strength, not its weakness. When you are dealing with pure theory, you can talk all you like about letting the farmer take his medicine without any sweetening. But responsible public officials can't indulge themselves in the luxury of dealing with pure theory. They have to carpenter a program that will be acceptable to Congress and to the nation. More than that, it has to be a program that balances the economics of the situation against the political and social considerations.

The economics of the farm problem are complicated enough all by themselves. Actually, there are two separate problems, one short-term and one long-term.

The long-term problem arises from the hard fact that the U.S. has too many farmers and too many small, relatively inefficient farms. This is a human problem; and no human problem can be solved overnight. But it is a problem that is gradually solving itself through a slow shift of population. The number of farmers is declining, which gives a higher per capita income to those who remain. Consumption is rising as population grows. Eventually, we can expect to reach a balance point unless misguided federal policy pushes in the wrong direction. The adjustment may seem maddeningly slow, but it nevertheless holds out the hopeand the only hope-of a long-run solution.

The short-run problem can be summed up in one word: surpluses. Years of rigid price supports at unrealistic levels have piled up huge government holdings of agricultural commodities-especially wheat and cotton. These great stocks hang over the markets, putting an extra strain on the price structure. As long as they exist,

agriculture will be in trouble.

It is against this background that the Eisenhower farm program must be appraised. The core of the plan is the "soil bank," an ingenious device for taking land out of production at least temporarily. Under this plan, the government would offer the farmers an income incentive to stop adding to the surpluses. In the breathing space thus purchased, the government could try to work down the surplus stocks, meanwhile encouraging the long-term population adjustment that is the only real answer to the farm problem.

There are lots of things you can say against the soil bank plan. Politically, it hasn't much sex appeal because it doesn't pretend to make surpluses vanish overnight, and it won't even put any money in the farmers' pockets in this election year unless Congress

acts with uncommon speed. Practically, it isn't the last word. (Agriculture Secy. Benson isn't even very fond of it.) Financially, it will be expensive. The government inevitably will take thumping losses on the surplus stocks as it unloads them. And subsidizing better soil use (to avoid producing more surpluses and more losses) will cost big money-\$3-billion in the first three years.

The fact remains that the Eisenhower program or something very much like it is the only approach to the farm problem that has a Chinaman's chance of success. The President has refused to take the opium eater's way out by dreaming of dumping the surpluses abroad to the jeopardy of trade relations with friendly nations. He has faced up to the fact that high rigid support prices inevitably will keep the surpluses piling up. At the same time, he has conceded that the farmers can't be left to work out their fate without help from the nation as a whole.

The soil bank plan has two great practical advantages: It provides for the creation of a reserve of soil-fertility that may prove of incalculable value some day when population is larger and demand for farm products begins to press upon supply.

It protects farm income at the same time that it preserves a system of flexible price supports that will gradually help agriculture adjust to the realities of the market.

As we see it, this is the only approach that makes sense. The alternative is to let agriculture remain indefinitely "the kept woman of politics."

Russia's Long-Run Threat

Even a brief study of the new Five Year Plan (page 145) just announced by the Soviets produces some sober reflections. The goals are as ambitious as any Stalin ever set himself-and far more challenging to the West.

Total industrial output is to be increased 65%. The 1960 target for steel is 68.3-million metric tons, an even higher figure than Stalin used to talk about. Electric power output is to be almost doubled, largely to serve atomic development. At the same time the goals for consumer goods, housing, and agriculture call for increases of 60% to 100%.

On the basis of past performance it must be assumed that the Soviet Union will make good on its goals for heavy industry, even if consumer goods fall far short.

To us the new Five Year Plan suggests three things: (1) The USSR means business in challenging our lead not only in atomic weapons but in the industrial field as well. (2) Given the nuclear stalemate, the economic competition could be decisive. (3) The time is past when the U.S. can afford to make light of Soviet economic capabilities.



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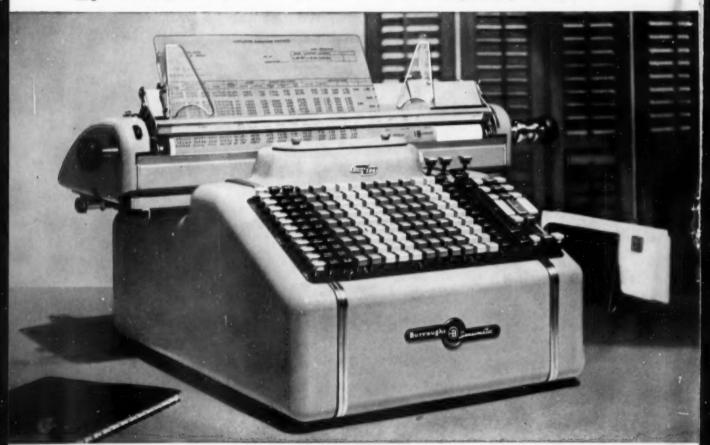
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